

Planning Unit 1 Maps – Pontchartrain Basin

Louisiana Coastal Protection and Restoration Planning Unit 1 Population by Parish and Community

Community	Year 2000	Year 2005 2nd Quarter	Year 2005 4th Quarter	Year 2050
Arabi	6,451	6,369	1,452	7,007
Baton Rouge	57,460	57,681	61,218	59,454
Chalmette	33,711	32,889	17,253	36,513
Destrehan	10,756	11,077	10,675	8,534
Eden Isle	1,184	1,162	1,017	1,247
Elmwood	4,270	4,424	4,276	7,414
French Settlement	1,399	1,779	1,977	1,667
Gardere	7,438	7,469	7,984	7,434
Garyville	2,772	2,934	2,934	3,818
Gonzales	7,972	8,535	9,300	15,744
Gramercy	1,960	1,923	1,973	2,037
Harahan	9,947	9,896	5,643	9,668
Inniswold	4,944	4,983	5,374	5,300
Jefferson	12,105	12,060	11,050	14,071
Kenner	64,395	64,181	53,500	65,612
Killian	1,074	1,249	1,335	1,142
Lacombe	3,077	3,462	2,937	12,483
Laplace	27,812	28,856	28,856	31,958
Lutcher	3,748	3,737	3,814	3,511
Mandeville	8,152	8,570	7,396	14,828

Community	Year 2000	Year 2005 2nd Quarter	Year 2005 4th Quarter	Year 2050
Meraux	10,998	10,691	4,053	13,415
Metairie	136,649	135,741	115,446	172,881
New Orleans	427,892	410,814	117,240	432,573
New Sarpy	1,031	1,078	1,029	836
Norco	4,116	4,291	4,070	3,680
Oak Hills Place	7,996	7,985	8,883	8,128
Old Jefferson	6,893	6,850	7,712	7,100
Ponchatoula	4,969	5,073	5,187	9,282
Poydras	3,327	3,084	1,490	5,283
Reserve	8,986	9,730	9,730	8,608
River Ridge	14,526	14,418	7,114	15,361
Shenandoah	17,070	17,125	18,940	16,117
Slidell	17,680	18,097	17,235	27,238
Sorrento	1,104	1,220	1,417	1,593
St. Gabriel	4,248	4,244	4,331	1,194
St. Rose	4,953	5,233	4,757	4,695
Village St. George	6,993	6,834	7,546	6,850
Violet	8,806	8,540	3,891	8,956
Westminster	3,202	3,267	3,537	3,859

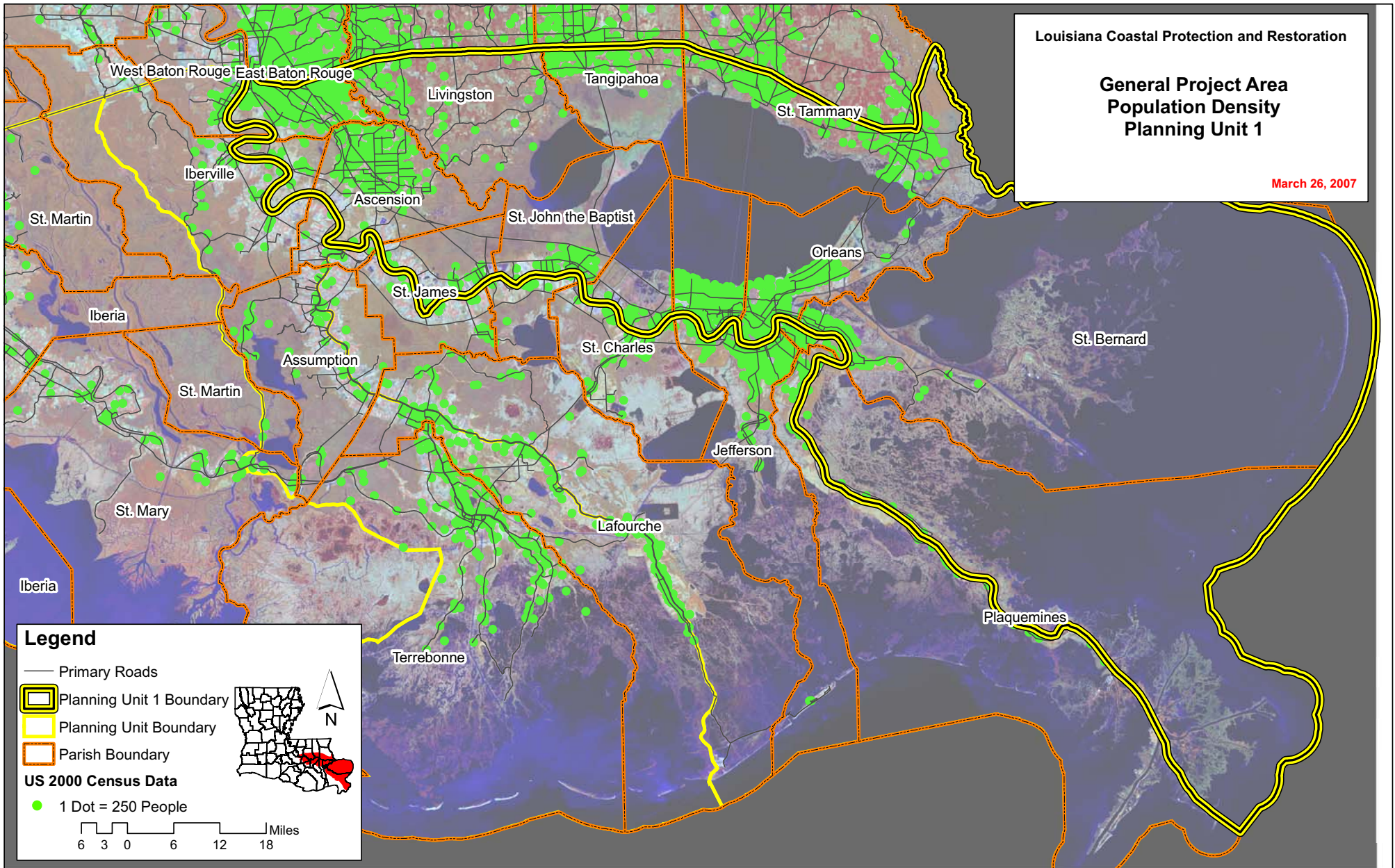
Parish	Year 2000	Year 2005 2nd Quarter	Year 2005 4th Quarter	Year 2050
Ascension	65,818	74,878	85,935	143,808
East Baton Rouge	150,269	150,473	166,346	158,547
Iberville	6,726	6,528	7,230	4,131
Jefferson	257,501	256,192	210,433	299,633
Livingston	31,723	37,670	40,790	66,148
Orleans	427,892	410,814	117,240	432,573
Plaquemines	3,025	3,239	1,763	4,647
St. Bernard	67,229	65,382	30,245	80,329
St. Charles	24,081	24,966	23,474	21,380
St. James	12,434	12,447	12,894	17,014
St. John the Baptist	39,570	41,520	41,520	44,384
St. Tammany	122,492	129,472	114,474	228,161
Tangipahoa	28,456	29,512	30,599	76,030
West Baton Rouge	2,000	2,022	2,162	1,759
	1,239,216	1,245,115	885,105	1,578,544

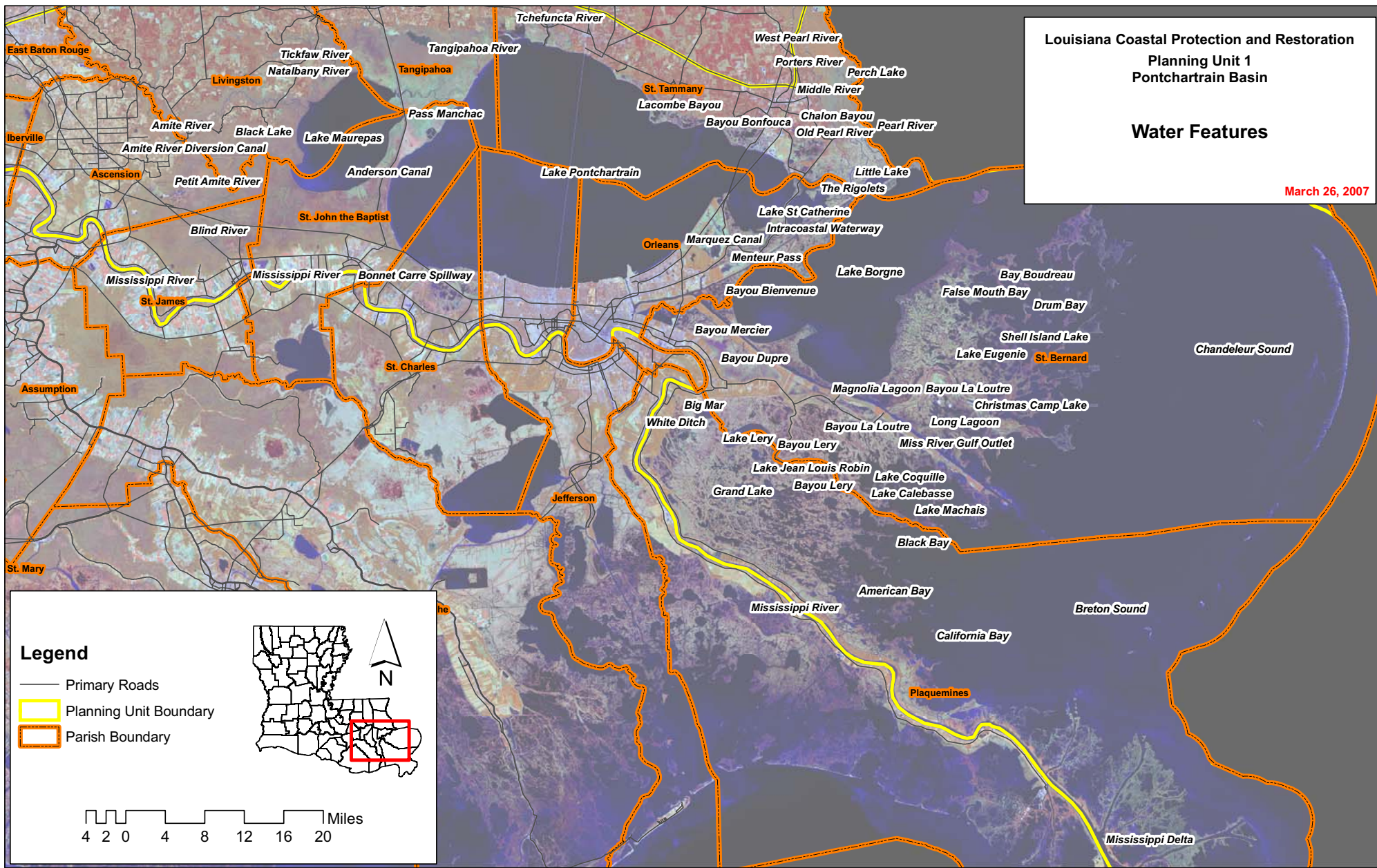
Notes:

1. Population for year 2000 and 2005 is based on the U.S. Census.
2. 2nd Quarter 2005 represents the population prior to hurricanes Katrina and Rita; 4th Quarter 2005 represents the population soon after hurricanes Katrina and Rita.
3. Population for the year 2050 is based on Calthorpe's High Employment projection using the Hybrid Land Use Allocation.
4. If portions of a parish were in more than one planning unit, then the population of the parish was divided between the planning units.
5. For U.S. Census purposes, the New Orleans Metropolitan area includes seven parishes, which are shown in **bold**.

**General Project Area
Population Density
Planning Unit 1**

March 26, 2007





**Louisiana Coastal Protection and Restoration
Planning Unit 1 (PU1) – Coastal Restoration Measures
Alternative 1 (Preliminary Draft State Master Plan)**

Code On Map	Measure Description	Measure Type	Alt 2	Alt 3	Alt 4
4	Resolve/close MRGO	To be determined	X	X	X
5a	MRGO environmental restoration features (southeast of Hopedale)	Bank Stabilization	X		
5b	Diversion at Hope Canal (~1,000 cfs)	Diversion	X	X	X
5c	Diversion at Convent/Blind River (~1,000 cfs)	Diversion	X	X	X
5d	Increase Amite River Diversion Canal Influence by Gapping Banks	Bank Gapping	X		X
5e	Diversion at White's Ditch (5,000-10,000 cfs)	Diversion	X	X	
5f	Modification at Caernarvon Diversion (~200,000cfs in State Plans and ~15,000 cfs in Alt. 4)	Diversion	X	X	X
6	Restore Chandeleur Islands	Barrier Island Restoration	X		
7	Maintain and restore Biloxi Landbridge and Barrier Reefs—South	Marsh Creation/Ridge Restoration	X	X	X
8	Restore Bayou LaLoutre Ridge	Ridge Restoration	X	X	X
9	Construct Jefferson Parish Fringe Marsh Buffer/ Establish shoreline protection on southshore of Lake Pontchartrain in Jefferson Parish	Marsh Creation/Shoreline Protection	X	X	
10	Maintain Lake Borgne Landbridge	Marsh Creation/Shoreline Stabilization	X	X	X
11	Sediment delivery by pipeline @ American/California Bay	Sediment Delivery via Pipeline	X		
12	Sediment delivery by pipeline @ Central Wetlands	Sediment Delivery via Pipeline/Marsh Creation		X	X
13	Sediment delivery by pipeline @ Golden Triangle	Sediment Delivery via Pipeline/Marsh Creation		X	X
14	Sediment delivery by pipeline @ LaBranche	Sediment delivery via Pipeline/Marsh Creation			
15	Benney's Bay Sediment Diversion (~20,000 cfs)	Sediment Diversion	X		X
16	Restore Main Pass Ridge with Dredge Material	Ridge Restoration/Bank Stabilization			
17	Add new bankline stabilization (Lake Borgne Corner at GIWW to Verret)	Bank Stabilization			
18	Goose Point/Pointe Platte Marsh Creation	Marsh Creation			
19	Maintenance of existing crevasses and construction of new crevasses	Crevasse Management	X		X
22	Maintain and restore Breton Landbridge with Marsh Creation	Marsh Creation		X	X



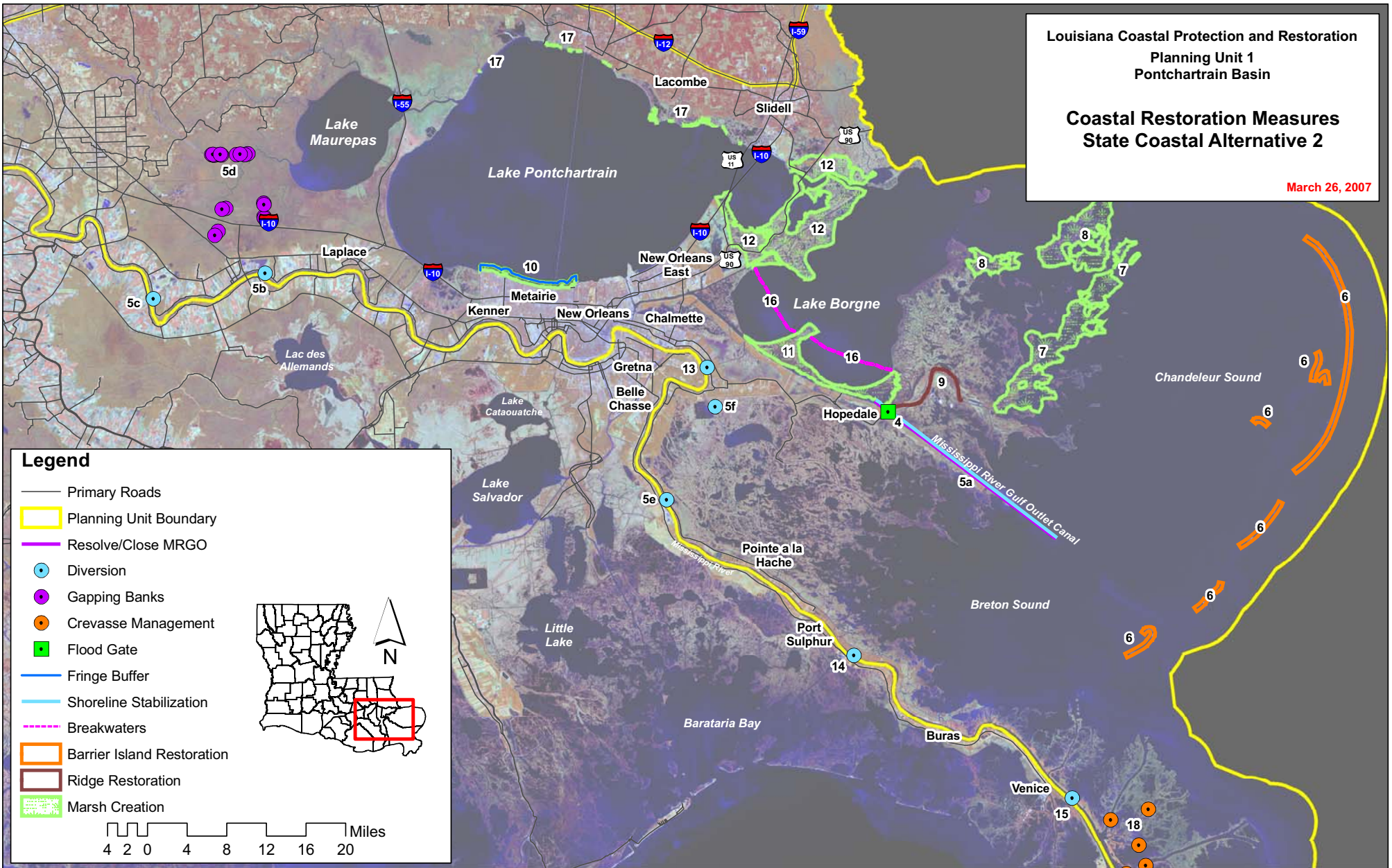
**Louisiana Coastal Protection and Restoration
Planning Unit 1 (PU1) – Coastal Restoration Measures
Alternative 2 (Preliminary Draft State Master Plan)**

Code On Map	Measure Description	Measure Type	Alt 1	Alt 3	Alt 4
4	Resolve/close MRGO	To be determined	X	X	X
5a	MRGO environmental restoration features (southeast of Hopedale)	Bank Stabilization	X		
5b	Diversions at Hope Canal (~1,000 cfs)	Diversions	X	X	X
5c	Diversions at Convent/Blind River (~1,000 cfs)	Diversions	X	X	X
5d	Increase Amite River Diversion Canal Influence by Gapping Banks	Bank Gapping	X		X
5e	Diversions at White's Ditch (5,000-10,000 cfs)	Diversions	X	X	
5f	Modification at Caernarvon Diversion (~200,000cfs in State Plans and ~15,000 cfs in Alt. 4)	Diversions	X	X	X
6	Restore Chandeleur Islands	Barrier Island Restoration	X		
7	Maintain and restore Biloxi Landbridge and Barrier Reefs—South	Marsh Creation/Ridge Restoration	X	X	X
8	Maintain and restore Biloxi Landbridge and Barrier Reefs—North	Marsh Creation/Ridge Restoration		X	X
9	Restore Bayou LaLoutre Ridge	Ridge Restoration	X	X	X
10	Construct Jefferson Parish Fringe Marsh Buffer/ Establish shoreline protection on southshore of Lake Pontchartrain in Jefferson Parish	Marsh Creation	X	X	
11	Maintain Lake Borgne Landbridge	Marsh Creation/Shoreline Stabilization	X	X	X
12	Maintain critical marsh shorelines and ridges of the East Orleans landbridge	Shoreline Protection/Marsh Creation		X	X
13	Construct the Violet Reintroduction to Maintain Target Salinity in LA and MS (~1,000 cfs in State Alt.2 and ~15,000 cfs in Alt. 4)	Diversions		X	X
14	Diversions at American/California Bay with sediment enrichment (~200,000 cfs in State Alt.2)	Diversions	X		
15	Benney's Bay Sediment Diversion (~20,000 cfs)	Sediment Diversion	X		X
16	Add Breakwater (in Lake Borgne from Southwest Corner to Biloxi Wildlife Management Area)	Breakwater			
17	St. Tammany Marsh Restoration and Shoreline Protection with Dredge Material and Vegetative Planting	Marsh Creation/Shoreline Protection		X	X
18	Maintenance of existing crevasses and construction of new crevasses	Crevasse Management	X		X

Louisiana Coastal Protection and Restoration
Planning Unit 1
Pontchartrain Basin

Coastal Restoration Measures
State Coastal Alternative 2

March 26, 2007



**Louisiana Coastal Protection and Restoration
Planning Unit 1 (PU1) – Coastal Restoration Measures
Alternative 3 (Preliminary Draft State Master Plan)**

Code On Map	Measure Description	Measure Type	Alt 1	Alt 2	Alt 4
6	Diversion at Hope Canal (~1,000 cfs)	Diversion	X	X	X
7	Diversion at Convent/Blind River (~1,000 cfs)	Diversion	X	X	X
8	Add bankline stabilization along Maurepas Landbridge (Lake Maurepas and Lake Pontchartrain)	Shoreline Stabilization			
9	St. Tammany Marsh Restoration and Shoreline Protection with Dredge Material and Vegetative Planting	Marsh Creation/Shoreline Protection		X	X
10	Construct Jefferson Parish Fringe Marsh Buffer/ Establish shoreline protection on southshore of Lake Pontchartrain in Jefferson Parish	Shoreline Stabilization	X	X	
11	Maintain critical marsh shorelines and ridges of the East Orleans landbridge	Shoreline Protection/Marsh Creation		X	X
12	Close MRGO at Bayou LaLoutre Ridge	To be determined	X	X	X
13	MRGO environmental restoration features (northwest of Hopedale)	Bank Stabilization			
14	Sediment delivery by pipeline @ Central Wetlands	Sediment Delivery via Pipeline/Marsh Creation	X		X
15	Sediment delivery by pipeline @ Golden Triangle	Sediment Delivery via Pipeline/Marsh Creation	X		X
16	Construct the Violet Reintroduction to Maintain Target Salinity in LA and MS (~1,000 cfs in State Alt.2 and ~15,000 cfs in Alt. 4)	Diversion		X	X
17	Maintain Lake Borgne Landbridge (Includes shoreline protection)	Marsh Creation/Shoreline Stabilization	X	X	X
18	Modification at Caernarvon Diversion (~200,000cfs in State Plans and ~15,000 cfs in Alt. 4)	Diversion	X	X	X
19	Maintain and restore Breton Landbridge with Marsh Creation	Marsh Creation	X		X
20	Diversion at White's Ditch (5,000-10,000 cfs)	Diversion	X	X	
21	Maintain and restore Biloxi Landbridge and Barrier Reefs—North and South	Marsh Creation/Ridge Restoration	X	X	X
22	Restore Bayou LaLoutre Ridge	Ridge Restoration	X	X	X
23	Medium Diversion at Bayou Lamoque	Diversion			X
24	Construct Inner Harbor Navigation Channel Lock Replacement	Navigation			

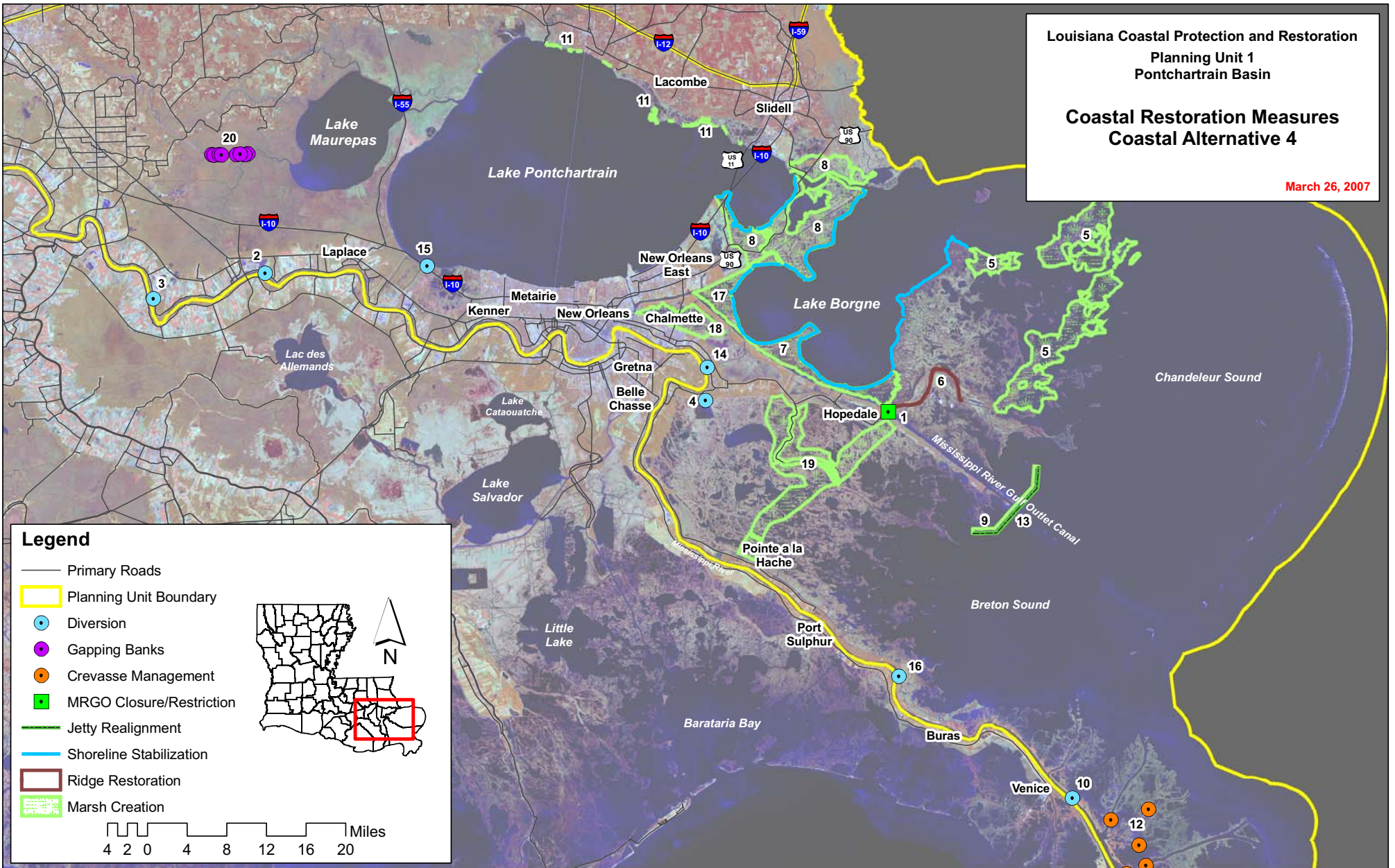
**Louisiana Coastal Protection and Restoration
Planning Unit 1 (PU1) – Coastal Restoration Measures
Alternative 4**

Code On Map	Measure Description	Measure Type	Alt 1	Alt 2	Alt 3
1	Close MRGO at Bayou LaLoutre Ridge	To be determined	X	X	X
2	Diversion at Hope Canal (~1,000 cfs)	Diversion	X	X	X
3	Diversion at Convent/Blind River (~1,000 cfs)	Diversion	X	X	X
4	Modification at Caernarvon Diversion (~200,000cfs in State Plans and ~15,000 cfs in Alt. 4)	Diversion	X	X	X
5	Maintain and restore Biloxi Landbridge and Barrier Reefs—North and South	Marsh Creation/Shoreline Stabilization	X	X	X
6	Restore Bayou LaLoutre Ridge	Ridge Restoration	X	X	X
7	Maintain Lake Borgne Landbridge	Marsh Creation/Shoreline Stabilization	X	X	X
8	Maintain critical marsh shorelines and ridges of the East Orleans landbridge	Marsh Creation/Shoreline Stabilization		X	X
9	Marsh Creation/Protection at MRGO Jetties	Marsh Creation			
10	Benney’s Bay Sediment Diversion (~20,000 cfs)	Sediment Diversion	X	X	
11	St. Tammany Marsh Restoration and Shoreline Protection with Dredge Material and Vegetative Planting	Marsh Creation/Shoreline Protection		X	X
12	Maintenance of existing crevasses and construction of new crevasses	Crevasse Management	X	X	
13	MRGO Jetty Realignment	Jetty Realignment			
14	Construct the Violet Freshwater Diversion to Maintain Target Salinity in LA and MS (~1,000 cfs in State Alt.2 and ~15,000 cfs in Alt. 4)	Diversion		X	X
15	LaBranch/Bonnet Carre Diversion	Diversion			
16	Bayou Lamoque Diversion	Diversion			X
17	Sediment Delivery via Pipe to Golden Triangle	Sediment Delivery via Pipeline/Marsh Creation	X		X
18	Sediment delivery by pipeline @ Central Wetlands (includes the New Orleans Sewerage and Water Board wastewater to wetlands project)	Sediment Delivery via Pipeline/Marsh Creation	X		X
19	Maintain Breton Basin Landbridge	Marsh Creation	X		X
20	Amite Diversion Canal Gapping	Gapping Banks	X	X	

Louisiana Coastal Protection and Restoration
Planning Unit 1
Pontchartrain Basin

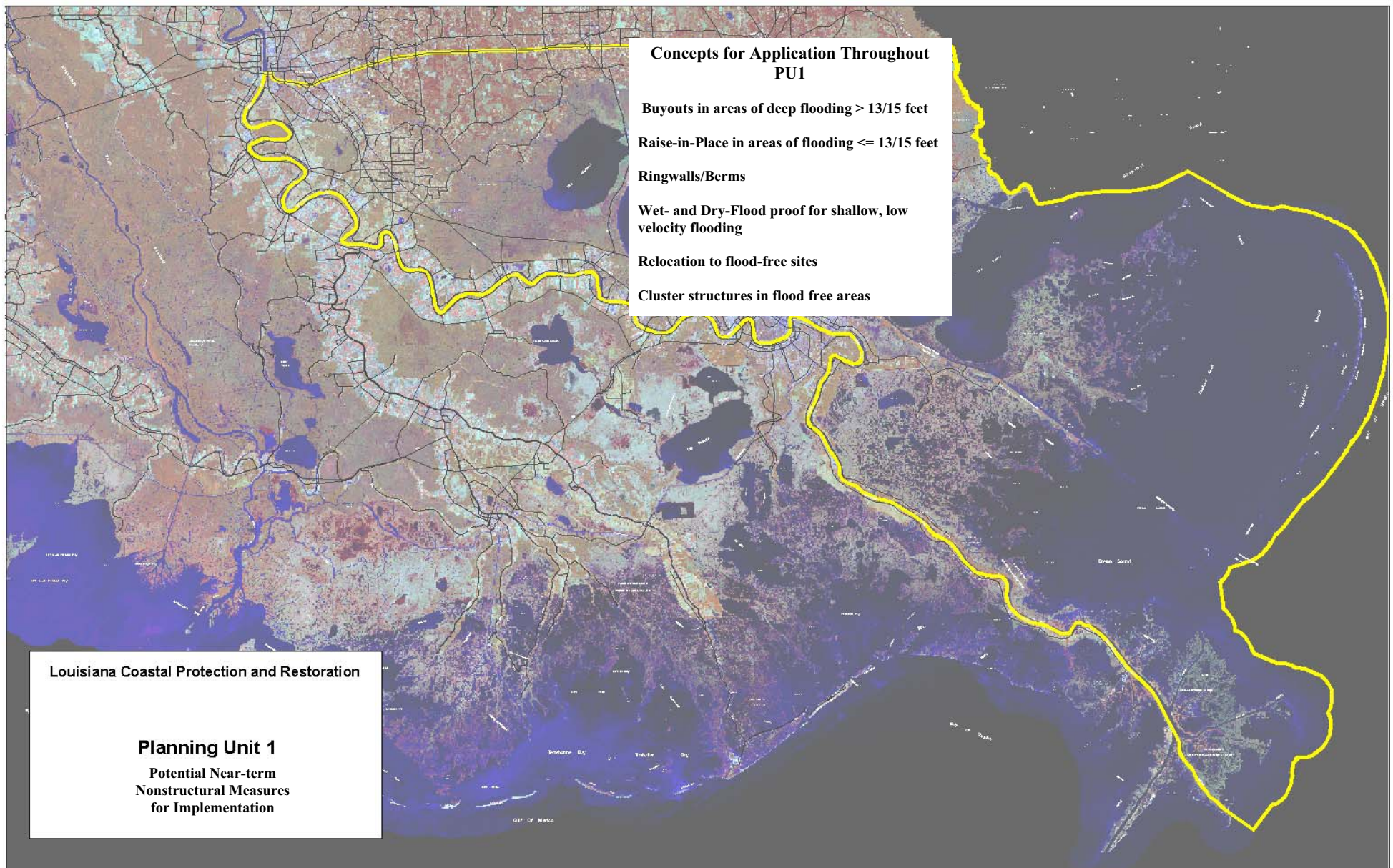
Coastal Restoration Measures
Coastal Alternative 4

March 26, 2007



LACPR Basic Plan Formulation Considerations
Non-Structural Measures Concepts

Concepts for Universal Application				
<ul style="list-style-type: none"> • Collaboration with local, State and Federal agencies for application of all nonstructural measures • Incentive program to elevate above ABFE/BFE to + mean sea level for new construction and reconstruction/relocation in collaboration with other agencies • Technical assistance/information/workshops on implementation of nonstructural measures • Ringwalls/berms surrounding private property • Evacuation/Buyout of V zones • Flood Proofing Critical Facilities and Critical Economic Assets 				
Potential Near-Term Nonstructural Measures for Implementation				
Planning Unit 1	Planning Unit 2	Planning Unit 3a	Planning Unit 3b	Planning Unit 4
Concepts for Application Throughout <ul style="list-style-type: none"> • Buyouts in areas of deep flooding > 13/15 feet • Raise-in-Place in areas of flooding < or = 13/15 feet • Ringwalls/Berms • Wet- and Dry-Flood proof for shallow, low velocity flooding • Relocation to flood-free sites • Cluster structures in flood free areas 	Larose to Golden Meadow - Elevation of New Construction, Raising-in-Place Existing Structures Along Coast - Flood Proofing of Critical Economic Assets	Along Coast <ul style="list-style-type: none"> • Raising - in - place • Buyout • Relocation • Wet/Dry Flood Proofing of Structures 	Erath / Delcambre / Henry Nonstructural Pilot Communities Project <ul style="list-style-type: none"> • Raising - in - place • Buyout • Relocation • Wet/Dry Flood Proofing of Structures 	Permanent Evacuation / Relocation of Residential Assets along Hwy LA - 82 for Risk Reduction and Ecosystem Restoration



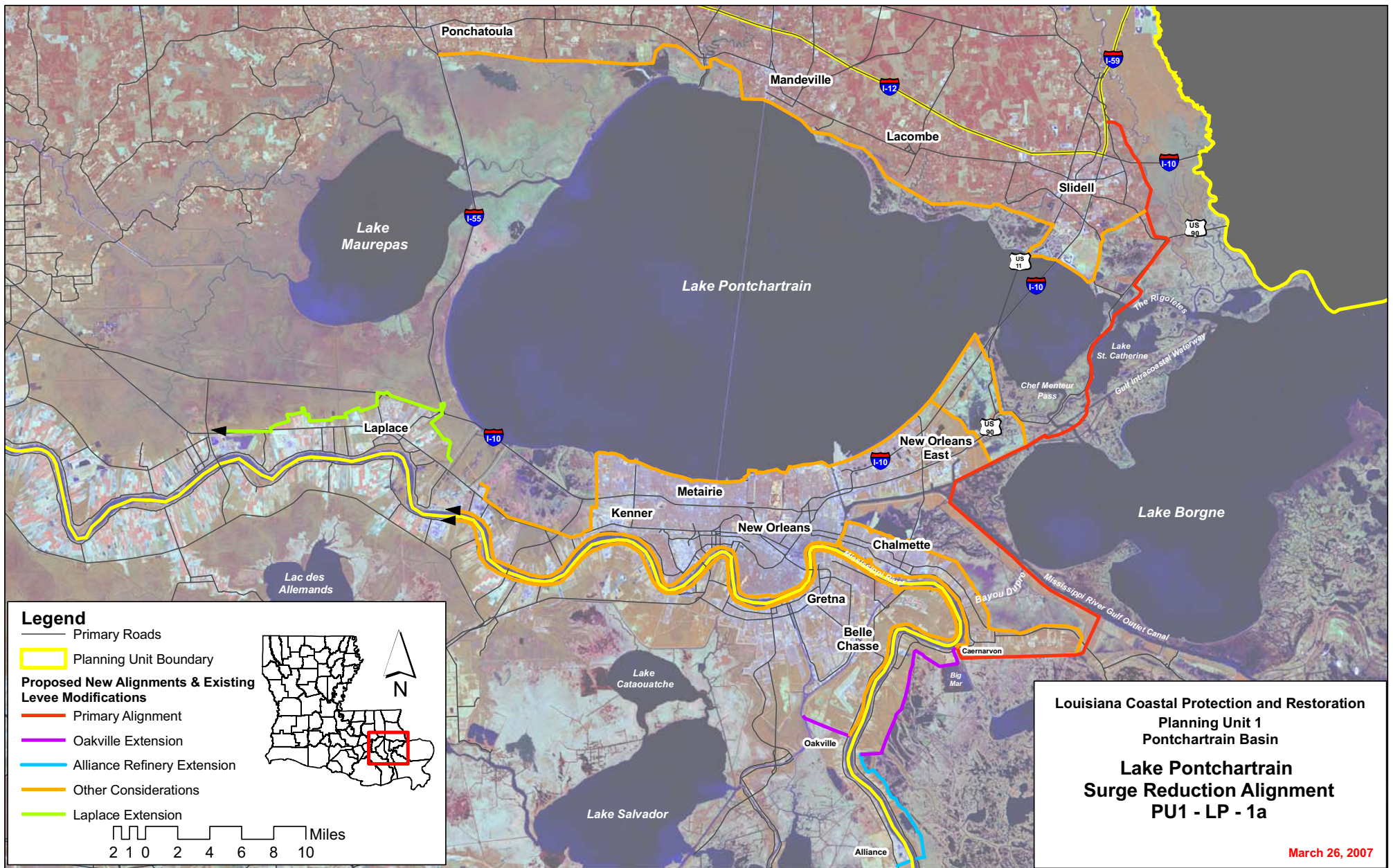
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-1a

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee across mouth of Lake Pontchartrain follows Highway 90 alignment; levee crosses the Golden Triangle at the confluence of the GIWW and MRGO.							
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.							
National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.							

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Rigolets to Lake Borgne	Hwy 90 alignment To be modeled with tidal passes open and closed; Weir structure also to be investigated	New	Fifteen 63-ft tainter gates, a 110-ft sector gate, and a 40-ft butterfly gated structure at the Rigolets; six 63-ft tainter gates and a 110-ft sector gate at Chef Menteur Pass	<ul style="list-style-type: none"> Solid foundation Short crossing Protects Hwy 90 Constructability Probably least cost 	<ul style="list-style-type: none"> Narrow right-of-way Social & cultural impacts Multiple landowners Landowner opposition
		Lake Borgne to Bayou Dupre Control Structure	Confluence of MRGO-GIWW alignment	New and existing	150-ft sector gate on GIWW; 150-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Flanks existing levee 	<ul style="list-style-type: none"> Levee length ~ 18miles Wetland impacts High surge elevation Close to development
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



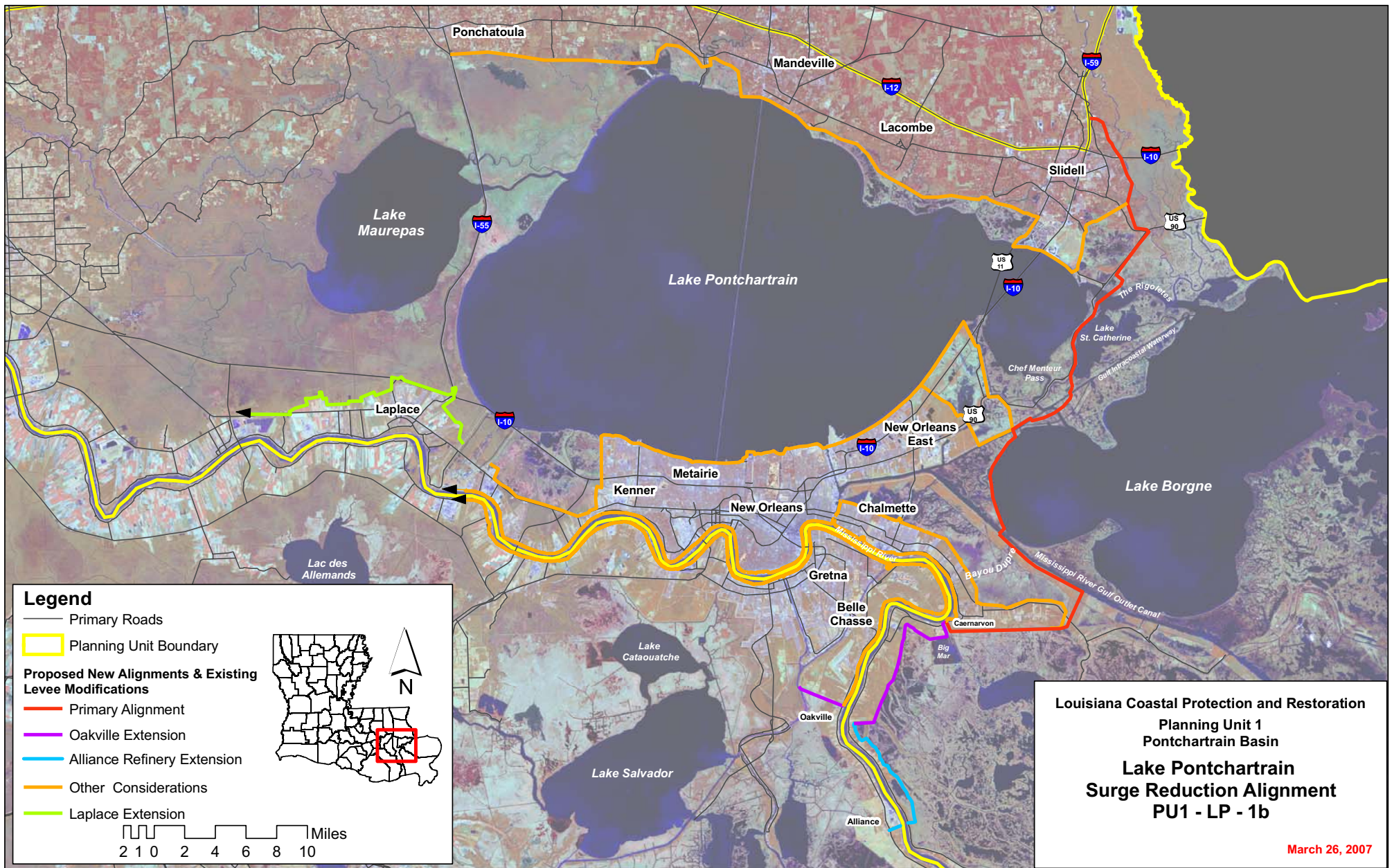
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-1b

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee across mouth of Lake Pontchartrain follows Highway 90 alignment; levee follows along edge of Golden Triangle and Lake Borgne.							
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.							
National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.							

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
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		Rigolets to Lake Borgne	Hwy 90 alignment To be modeled with tidal passes open and closed; Weir structure also to be investigated	New	Fifteen 63-ft tainter gates, a 110-ft sector gate, and a 40-ft butterfly gated structure at the Rigolets; six 63-ft tainter gates and a 110-ft sector gate at Chef Menteur Pass	<ul style="list-style-type: none"> Solid foundation Short crossing Protects Hwy 90 Constructability Probably least cost 	<ul style="list-style-type: none"> Narrow row Social & cultural impacts Multiple landowners Landowner opposition
		Lake Borgne to Bayou Dupre Control Structure	Lake Borgne alignment	New	150-ft sector gate on GIWW; 250-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Use marsh for storage Build in water to avoid direct wetland impacts 	<ul style="list-style-type: none"> Encloses wetlands
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
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		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-2a

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee across mouth of Lake Pontchartrain follows GIWW/railroad alignment; levee crosses the Golden Triangle at the confluence of the GIWW and MRGO.

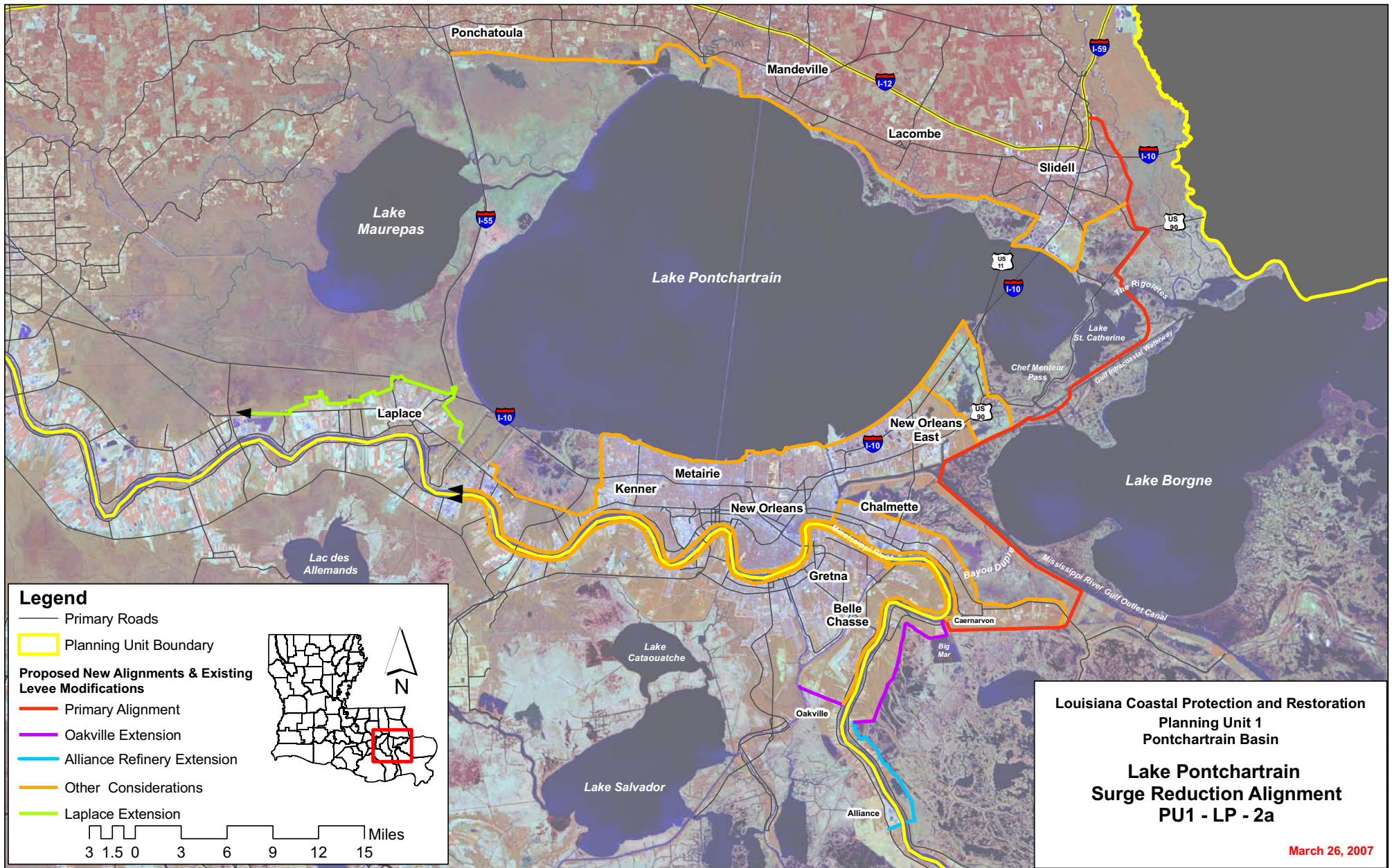
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.

National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Rigolets to Lake Borgne	GIWW/railroad alignment To be modeled with tidal passes open and closed; Weir structure also to be investigated	New	Fifteen 63-ft tainter gates, a 110-ft sector gate, and a 40-ft butterfly gated structure at the Rigolets; six 63-ft tainter gates and a 110-ft sector gate at Chef Menteur Pass	<ul style="list-style-type: none"> Solid foundation Protects Hwy 90 Constructability 	<ul style="list-style-type: none"> Wetland impacts High cost because of length
		Lake Borgne to Bayou Dupre Control Structure	Confluence of MRGO-GIWW alignment	New and existing	150-ft sector gate on GIWW; 150-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Flanks existing levee 	<ul style="list-style-type: none"> Levee length ~ 18miles Wetland impacts High surge elevation Close to development
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



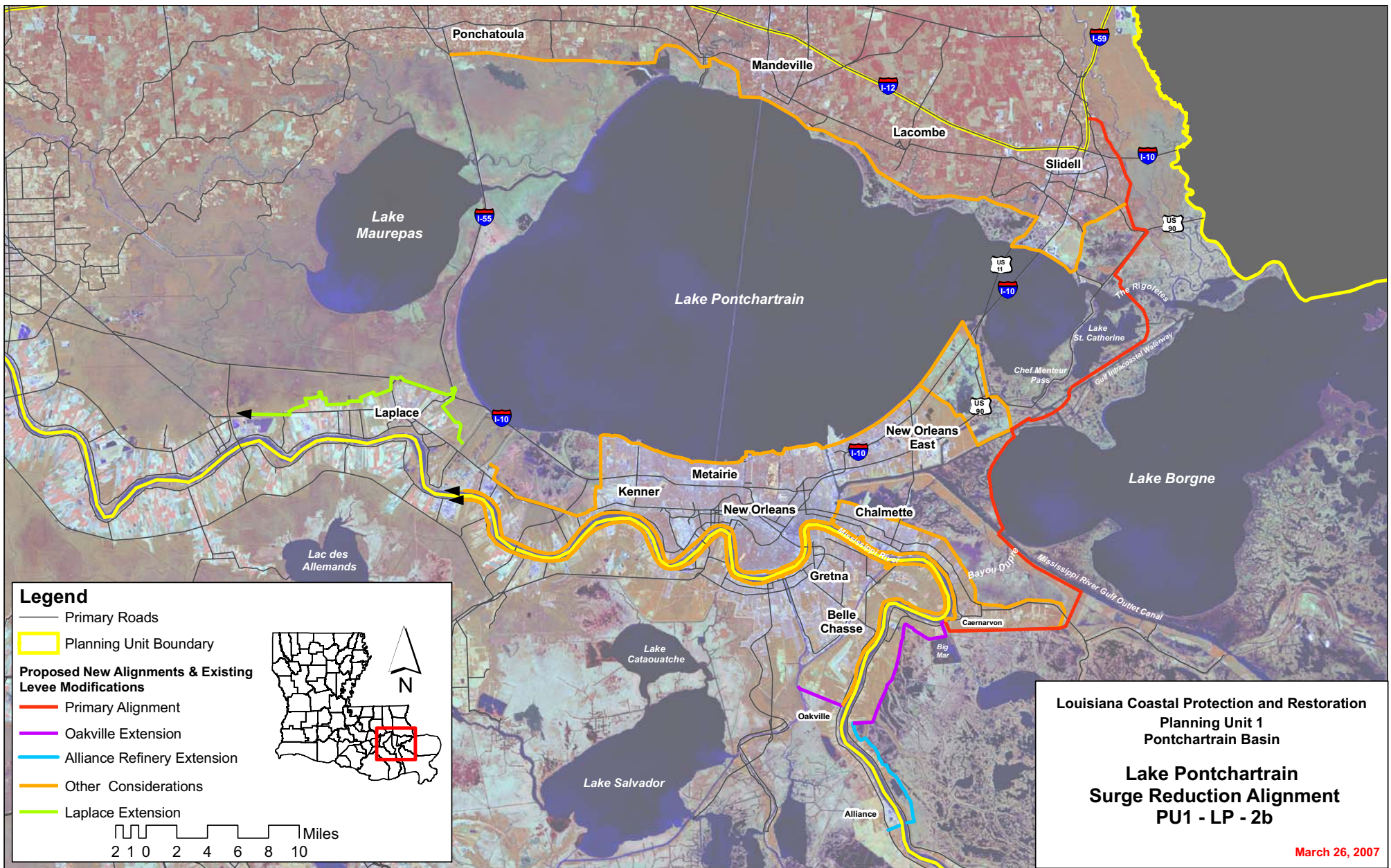
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-2b

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee across mouth of Lake Pontchartrain follows GIWW/railroad alignment; levee follows edge of Golden Triangle and Lake Borgne.
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.
National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Rigolets to Lake Borgne	GIWW/railroad alignment To be modeled with tidal passes open and closed; Weir structure also to be investigated	New	Fifteen 63-ft tainter gates, a 110-ft sector gate, and a 40-ft butterfly gated structure at the Rigolets; six 63-ft tainter gates and a 110-ft sector gate at Chef Menteur Pass	<ul style="list-style-type: none"> Solid foundation Protects Hwy 90 Constructability 	<ul style="list-style-type: none"> Wetland impacts High cost because of length
		Lake Borgne to Bayou Dupre Control Structure	Lake Borgne alignment	New	150-ft sector gate on GIWW; 250-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Use marsh for storage Build in water to avoid direct wetland impacts 	<ul style="list-style-type: none"> Encloses wetlands
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

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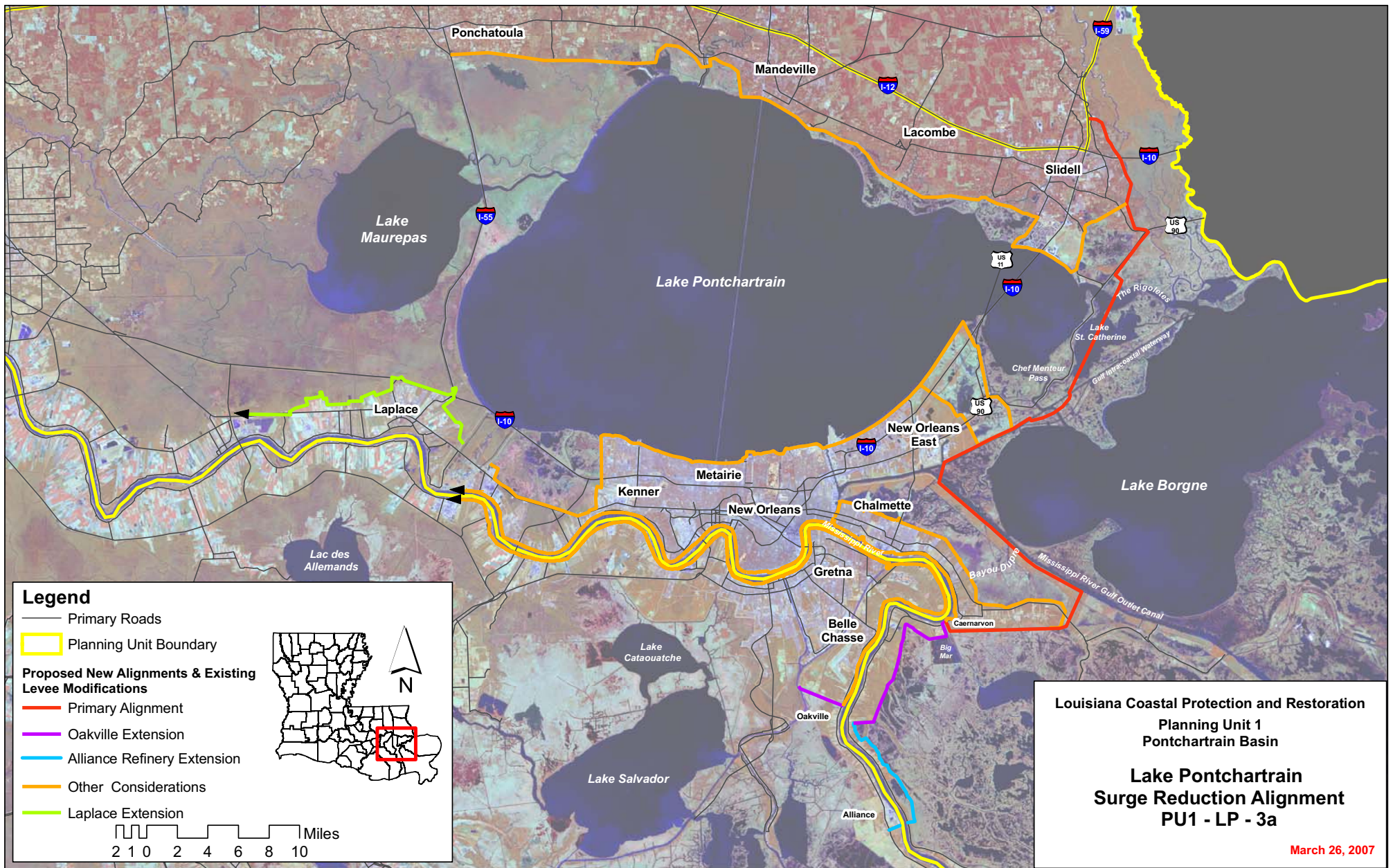
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-3a

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee across mouth of Lake Pontchartrain follows Lake St. Catherine alignment; levee crosses the Golden Triangle at the confluence of the GIWW and MRGO.
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.
National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Rigolets to Lake Borgne	Lake St. Catherine alignment To be modeled with tidal passes open and closed; Weir structure also to be investigated	New	Fifteen 63-ft tainter gates, a 110-ft sector gate, and a 40-ft butterfly gated structure at the Rigolets; six 63-ft tainter gates and a 110-ft sector gate at Chef Menteur Pass	<ul style="list-style-type: none"> Avoids challenges of Hwy 90 and GIWW/railroad alignments Protects Hwy 90 	<ul style="list-style-type: none"> Requires innovative design
		Lake Borgne to Bayou Dupre Control Structure	Confluence of MRGO-GIWW alignment	New and existing	150-ft sector gate on GIWW; 150-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Flanks existing levee 	<ul style="list-style-type: none"> Levee length ~ 18miles Wetland impacts High surge elevation Close to development
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Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
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Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
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		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

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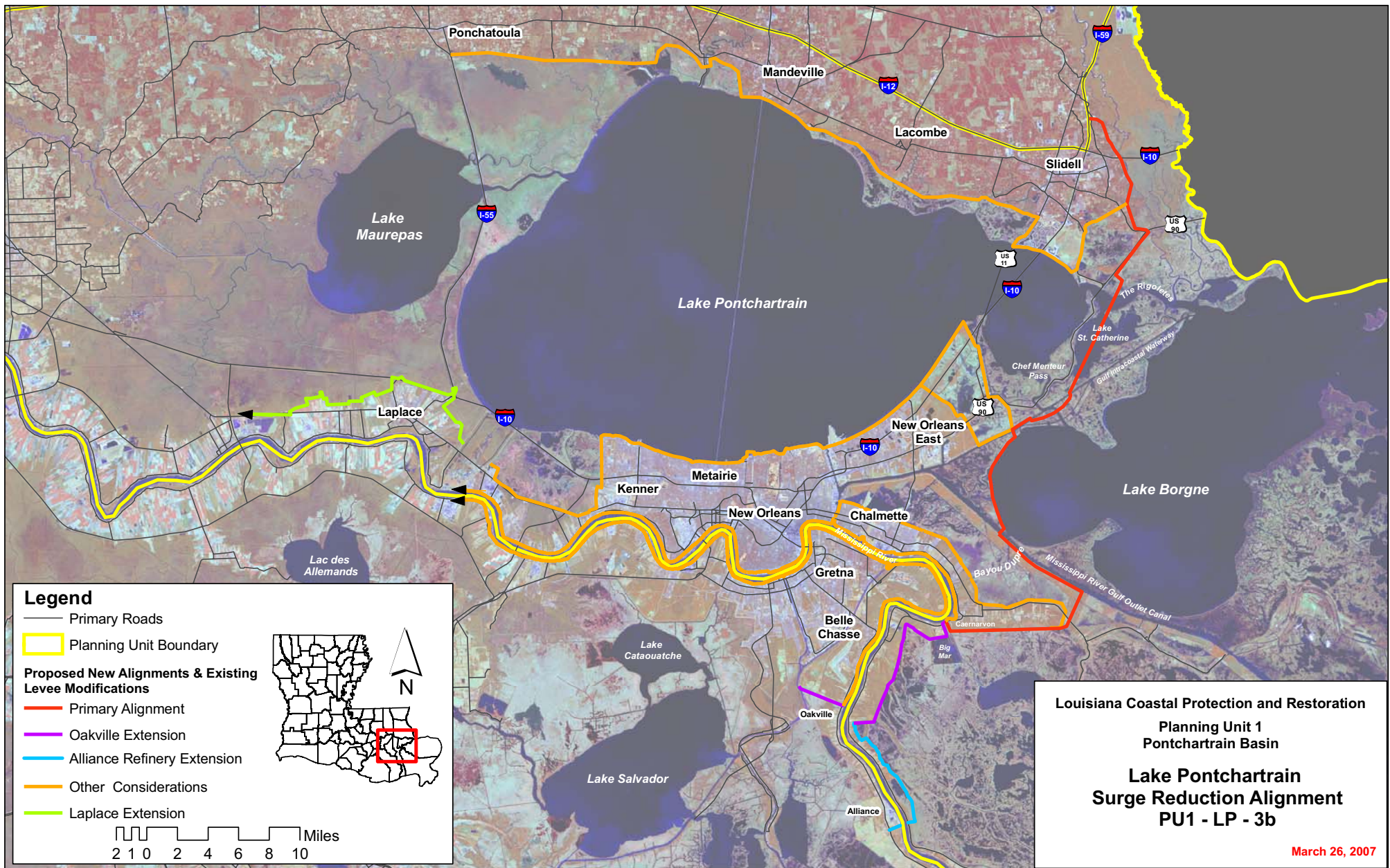
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-3b

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee across mouth of Lake Pontchartrain follows Lake St. Catherine alignment; levee follows along edge of Golden Triangle and Lake Borgne.							
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Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
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Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
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Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



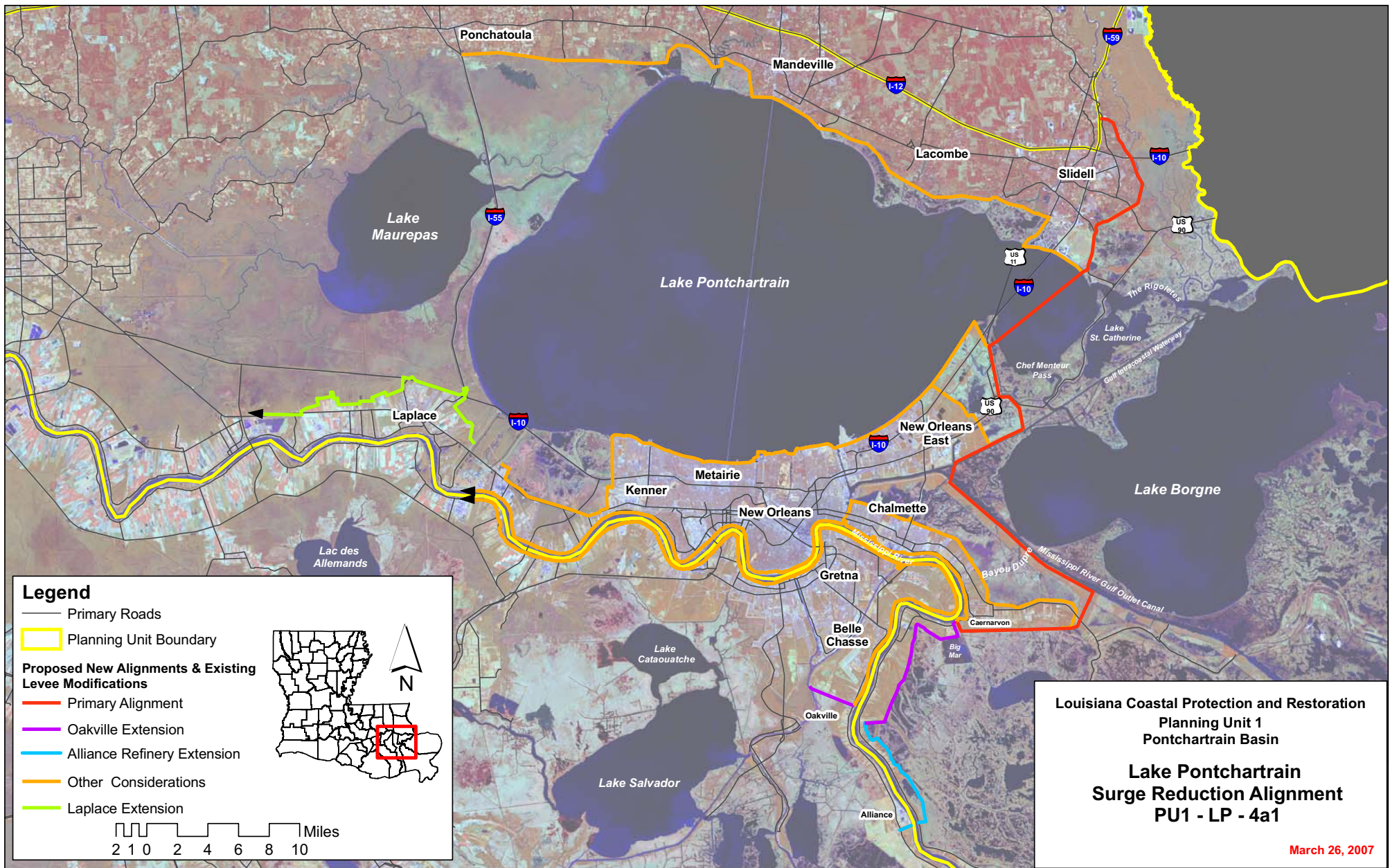
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-4a-1

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain and connects to Federal levees along Bayou Savage; levee crosses Golden Triangle at the confluence of the GIWW and MRGO.							
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		Rigolets to Lake Borgne	Lake Pontchartrain crossing with connection to existing Federal levees	New and existing	Structure across Lake Pontchartrain	<ul style="list-style-type: none"> Avoid challenges of Hwy 90 and GIWW/railroad alignments 	<ul style="list-style-type: none"> Requires innovative design Long distance in open water Difficult to construct and operate (would have to be kept open)
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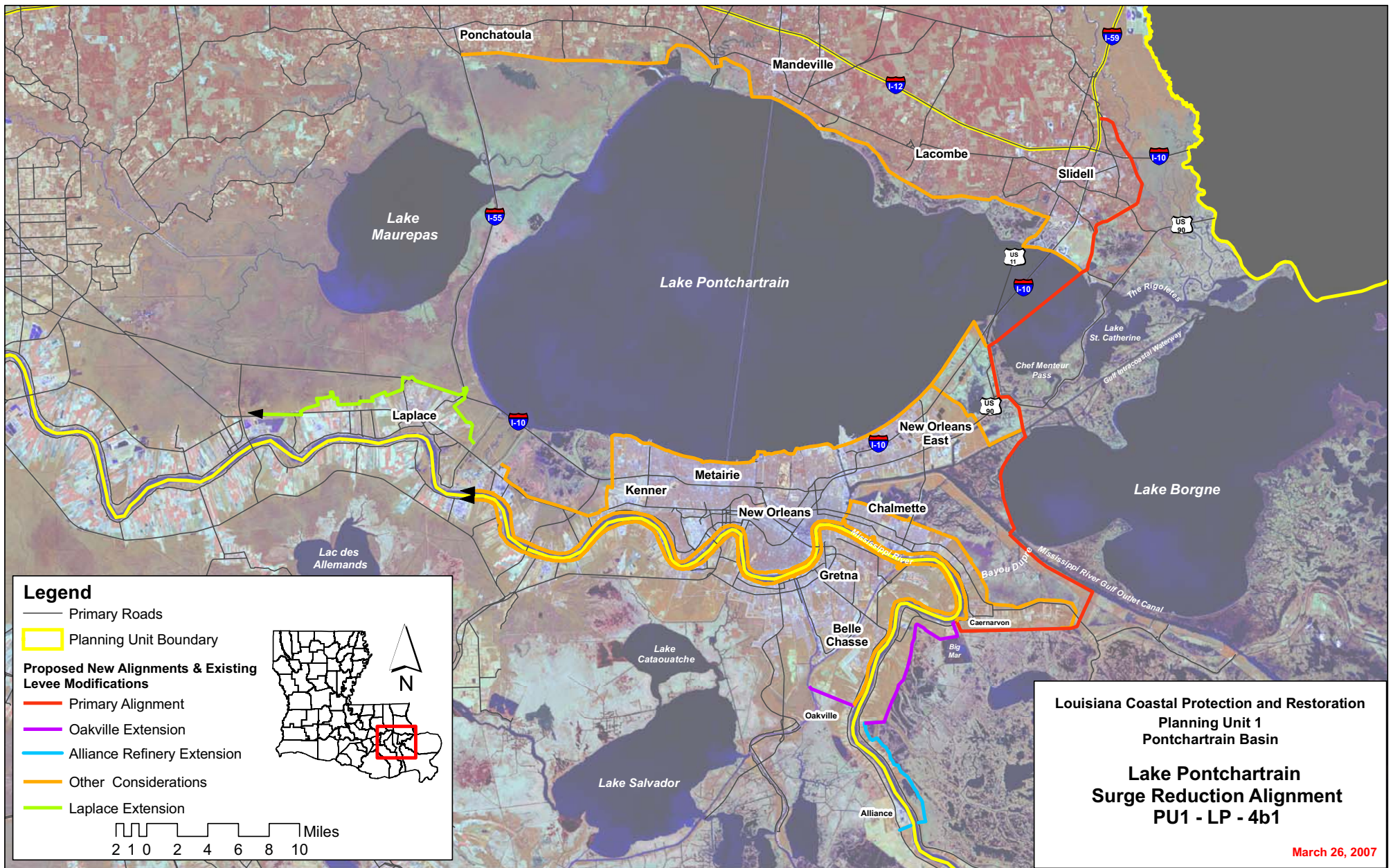
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-4b-1

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain and connects to Federal levees along Bayou Savage; levee follows along edge of Golden Triangle and Lake Borgne.							
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Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



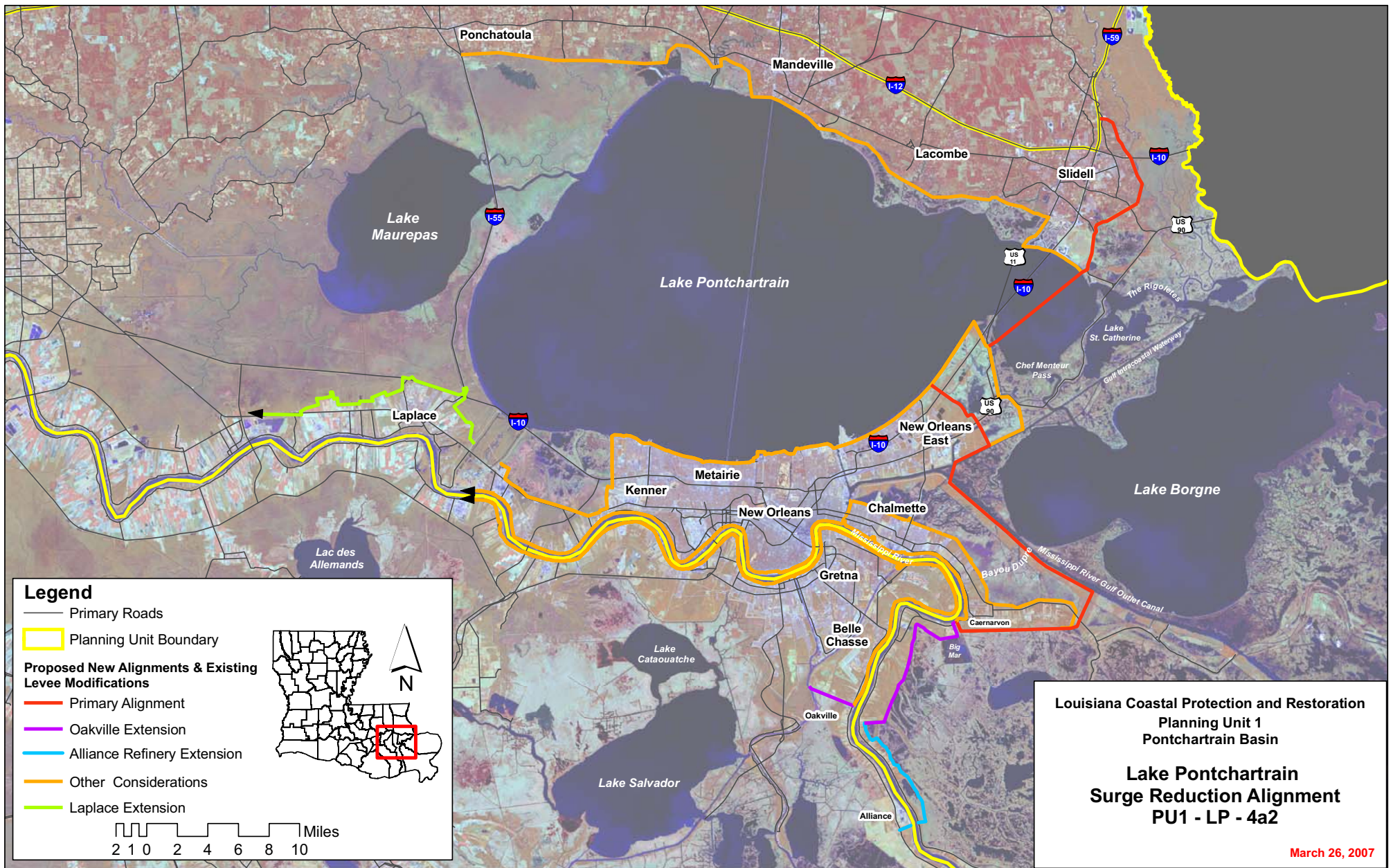
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-4a-2

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain with levee along Maxent Canal; levee crosses Golden Triangle at the confluence of the GIWW and MRGO.							
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.							
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Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Rigolets to Lake Borgne	Lake Pontchartrain crossing with Maxent Canal levee	New and existing	Structure across Lake Pontchartrain	<ul style="list-style-type: none"> Avoid challenges of Hwy 90 and GIWW/railroad alignments 	<ul style="list-style-type: none"> Same as PU1-BP-4a-1, but also leaves I-10 across Bayou Savage unprotected
		Lake Borgne to Bayou Dupre Control Structure	Confluence of MRGO-GIWW alignment	New and existing	150-ft sector gate on GIWW; 150-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Flanks existing levee 	<ul style="list-style-type: none"> Levee length ~ 18miles Wetland impacts High surge elevation Close to development
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
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		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Chalmette back levees	Follows existing non-Federal levees in Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

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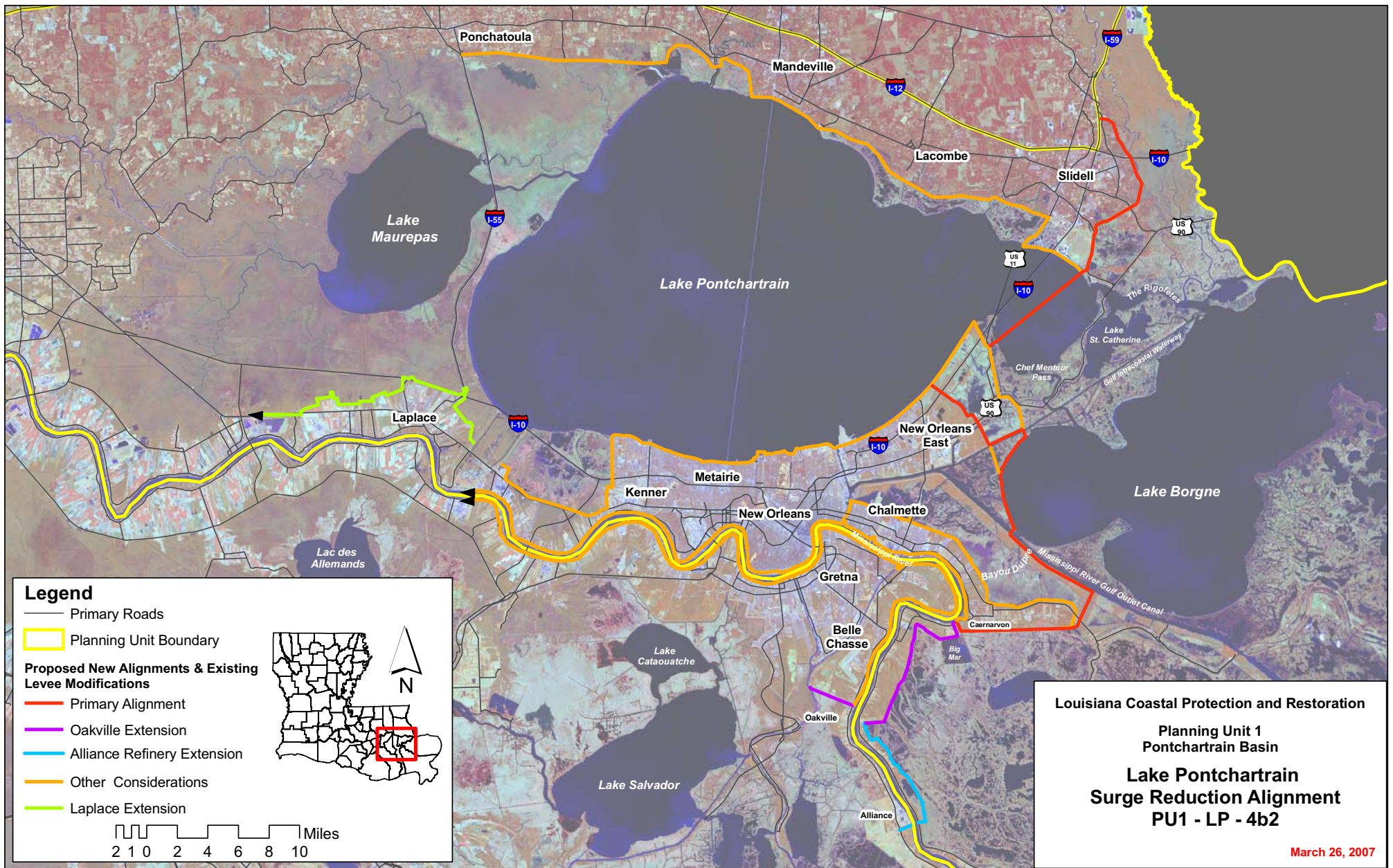
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-4b-2

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain with levee along Maxent Canal; levee follows along edge of Golden Triangle and Lake Borgne.							
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		Rigolets to Lake Borgne	Lake Pontchartrain crossing with Maxent Canal levee	New and existing	Structure across Lake Pontchartrain	<ul style="list-style-type: none"> Avoid challenges of Hwy 90 and GIWW/railroad alignments 	<ul style="list-style-type: none"> Same as BP-4b-1, but also leaves I-10 across Bayou Savage unprotected
		Lake Borgne to Bayou Dupre Control Structure	Lake Borgne alignment	New	150-ft sector gate on GIWW; 250-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Use marsh for storage Build in water to avoid direct wetland impacts 	<ul style="list-style-type: none"> Encloses wetlands
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
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Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
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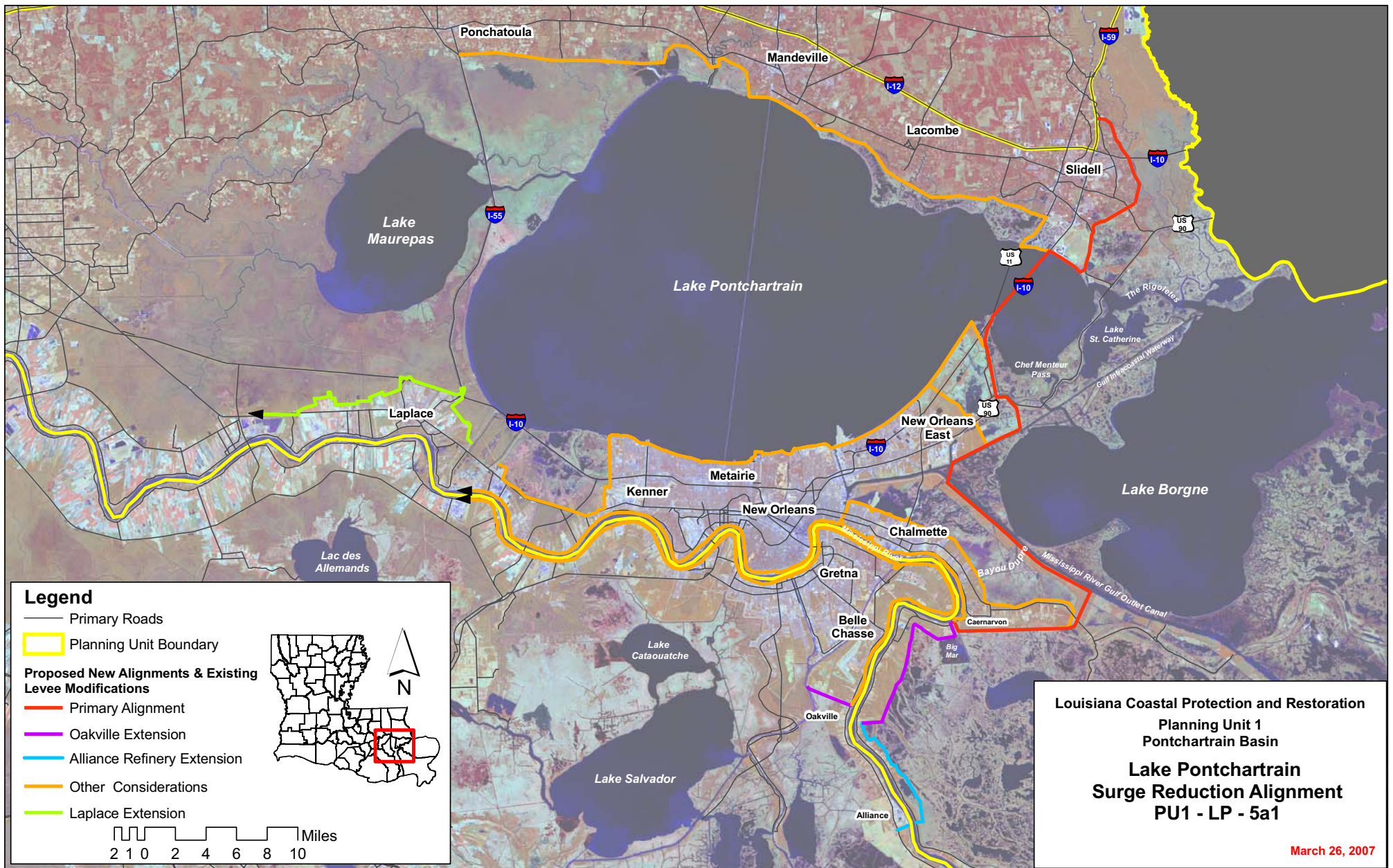
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-5a-1

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain along I-10 and connects to Federal levees; levee crosses the Golden Triangle at the confluence of the GIWW and MRGO.							
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		Rigolets to Lake Borgne	Lake Pontchartrain crossing along I-10 with connection to existing Federal levees	New and 2010 base condition 100 yr LOP	Structure along I-10	<ul style="list-style-type: none"> Avoid challenges of Hwy 90 and GIWW/railroad alignments 	<ul style="list-style-type: none"> Requires innovative design Long distance in open water Difficult to construct and operate (would have to be kept open and I-10 not designed for storm surge)
		Lake Borgne to Bayou Dupre Control Structure	Confluence of MRGO-GIWW alignment	New and existing	150-ft sector gate on GIWW; 150-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Flanks existing levee 	<ul style="list-style-type: none"> Levee length ~ 18miles Wetland impacts High surge elevation Close to development
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Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
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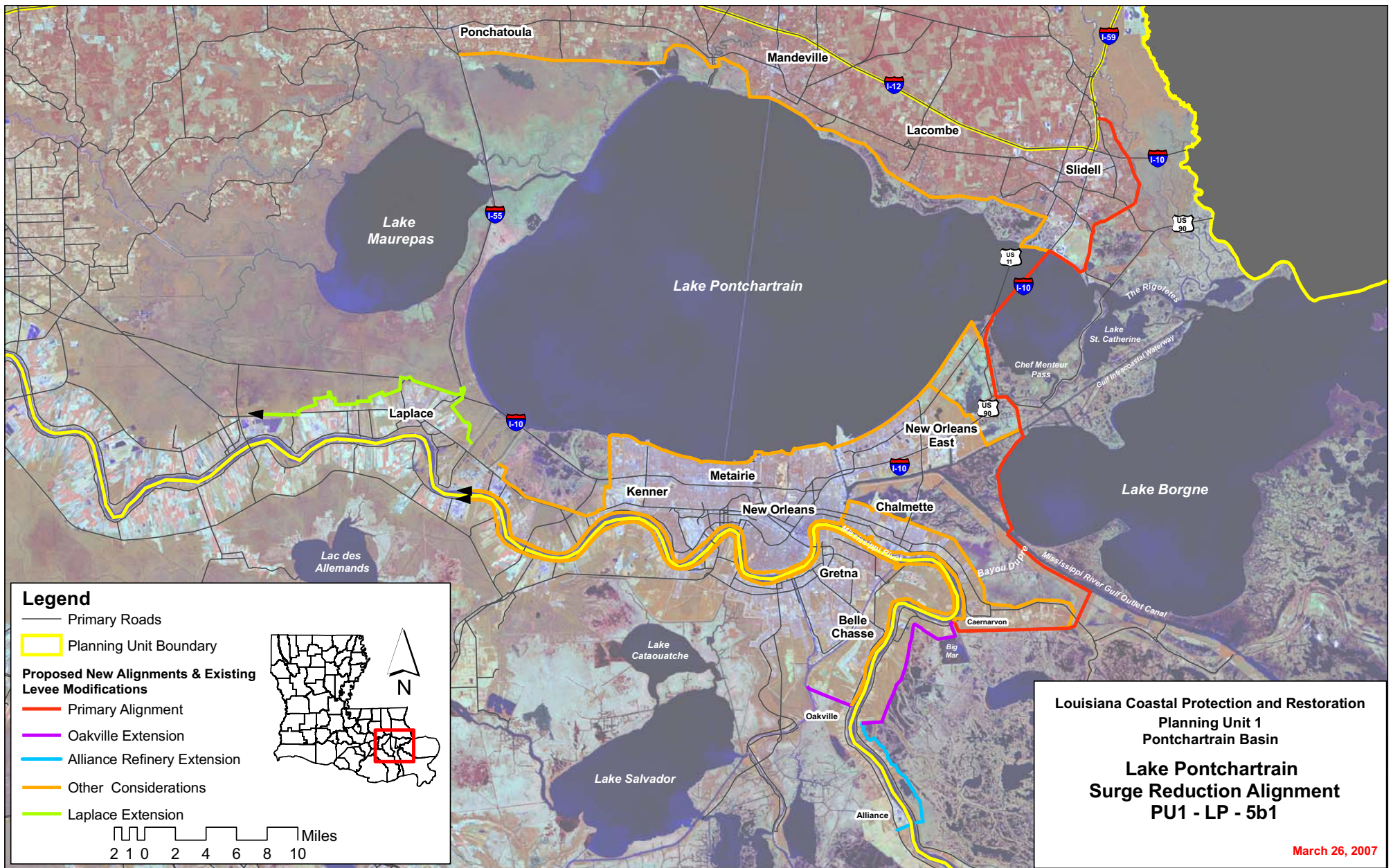
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-5b-1

General Description: Plan includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain along I-10 and connects to Federal levees; levee follows along edge of Golden Triangle and Lake Borgne.
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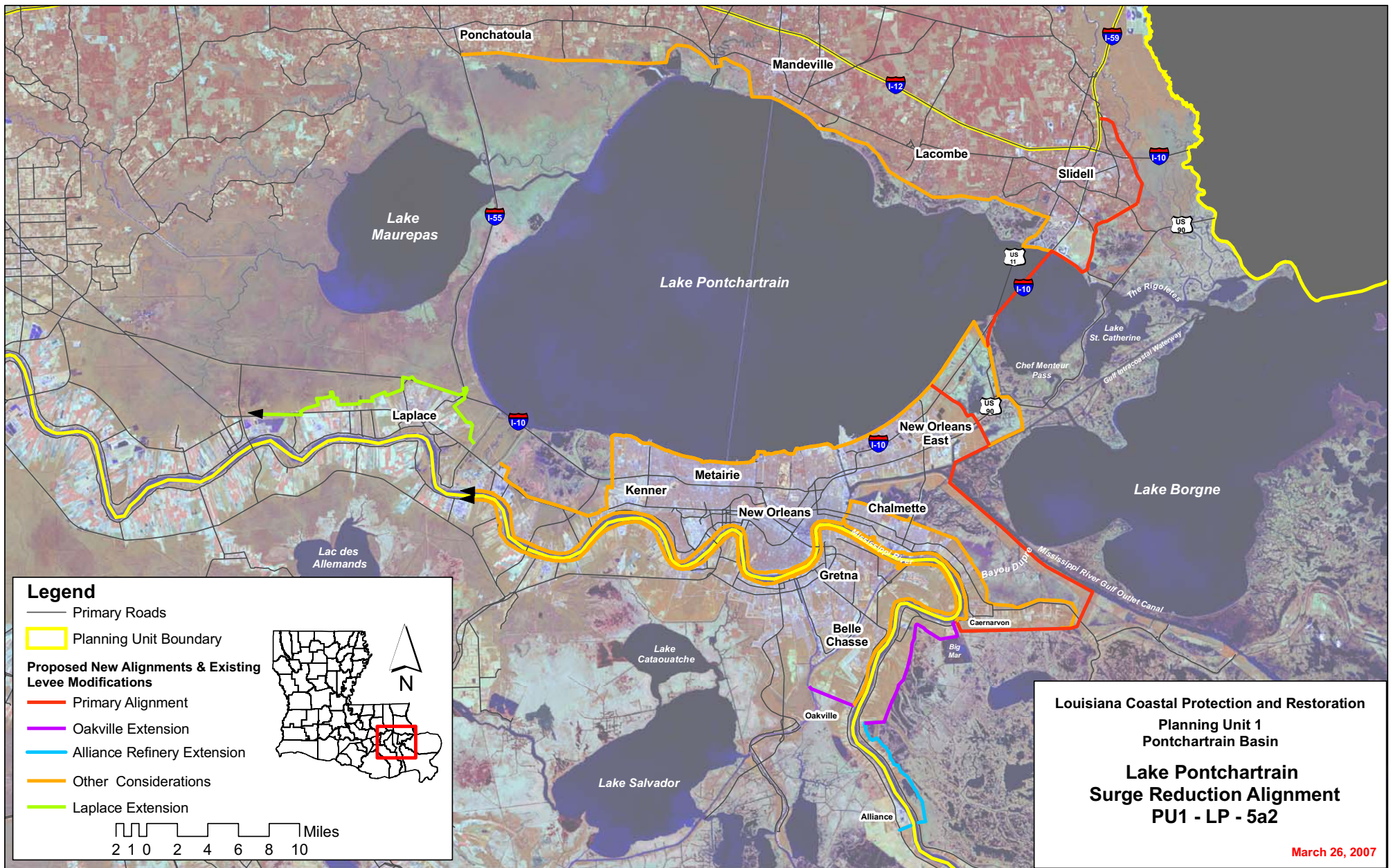
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Lake Pontchartrain Surge Reduction Alignment
PU1-LP-5a-2

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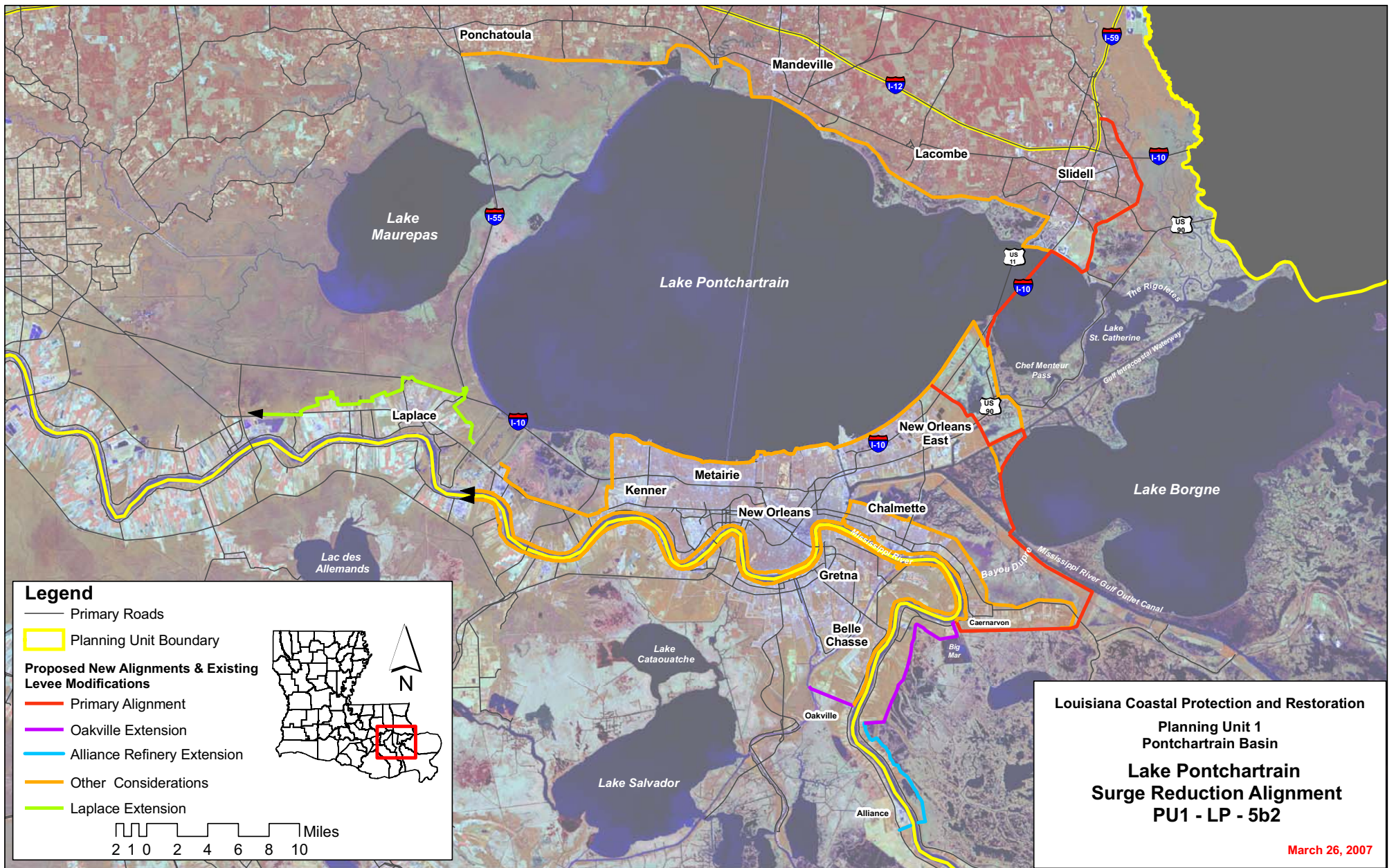
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Lake Pontchartrain Surge Reduction Alignment
PU1-LP-5b-2

General Description: Measure includes barrier levee from the Pearl River at Highway 59, north of Slidell, to Caernarvon on east bank of Mississippi River. Variation: Barrier levee crosses the mouth of Lake Pontchartrain along I-10 with Maxent Canal levee; levee follows along edge of Golden Triangle and Lake Borgne.							
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National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.							

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red	Primary Alignment	I-59 to Rigolets	Connects coastal barrier to high ground	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Rigolets to Lake Borgne	Lake Pontchartrain crossing along I-10 with Maxent Canal levee	New and existing	Structure along I-10	<ul style="list-style-type: none"> Avoid challenges of Hwy 90 and GIWW/railroad alignments 	<ul style="list-style-type: none"> Requires innovative design Long distance in open water Difficult to construct and operate (would have to be kept open & I-10 not designed for storm surge)
		Lake Borgne to Bayou Dupre Control Structure	Lake Borgne alignment	New	150-ft sector gate on GIWW; 250-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Use marsh for storage Build in water to avoid direct wetland impacts 	<ul style="list-style-type: none"> Encloses wetlands
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Green	Laplace Extension	Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Chalmette back levees	Follows existing non-Federal levees in Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin

High Level Alignment

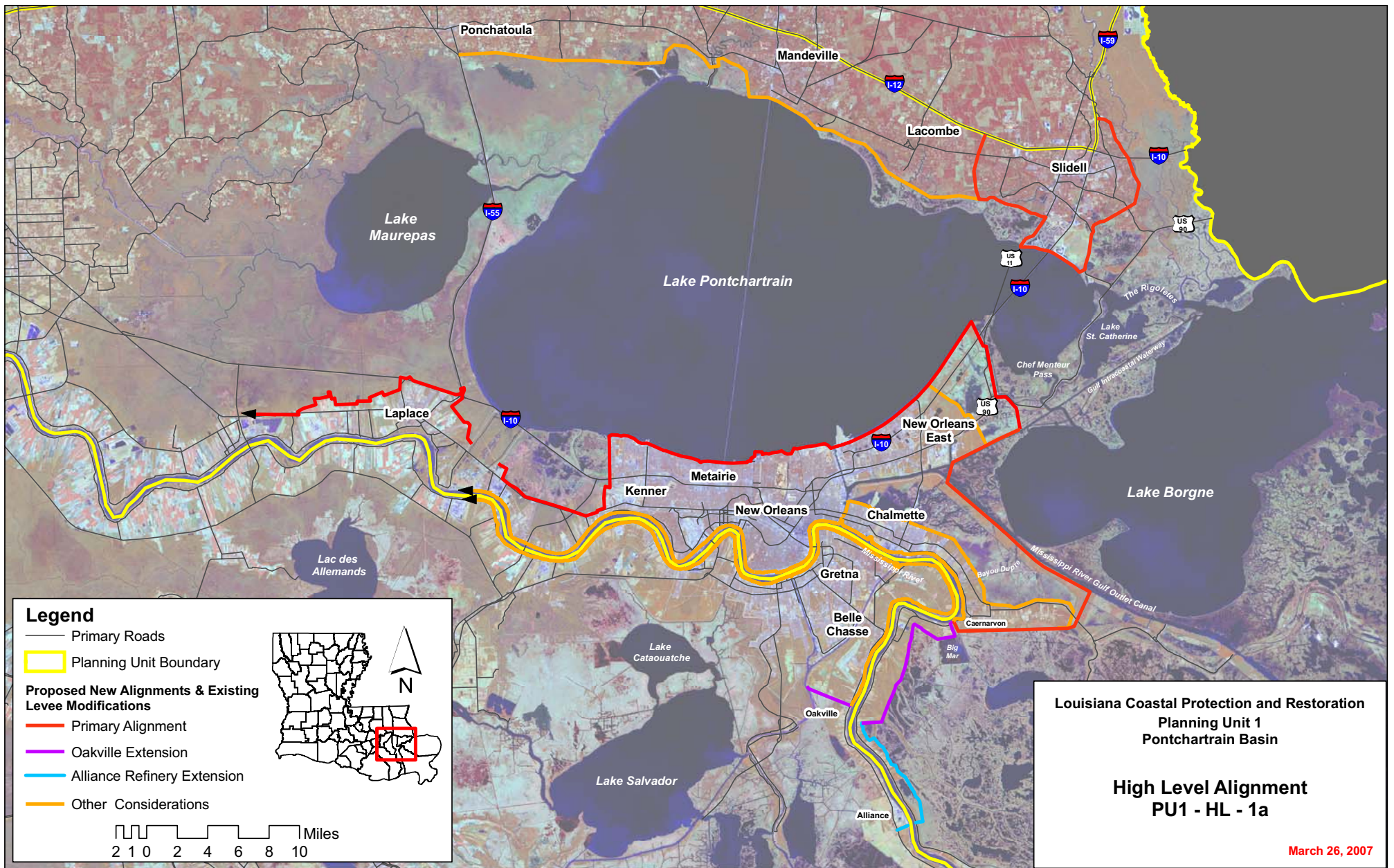
PU1-HL-1a

General Description: The High Level measure proposes to raise levees on the Southshore to CAT5 protection and adds levees on the Northshore. Variation: Levee crosses Golden Triangle at the confluence of the GIWW and MRGO.							
Population Receiving Risk Reduction Benefits: The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.							
National and Strategic Resources: French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.							

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red Green	Primary Alignment	Ring levee around Slidell	Slidell ring levee	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Lake Borgne to Bayou Dupre Control Structure	Confluence of MRGO-GIWW alignment	New and existing	150-ft sector gate on GIWW; 150-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Flanks existing levee 	<ul style="list-style-type: none"> Levee length ~ 18 miles Wetland impacts High surge elevation Close to development
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
		Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



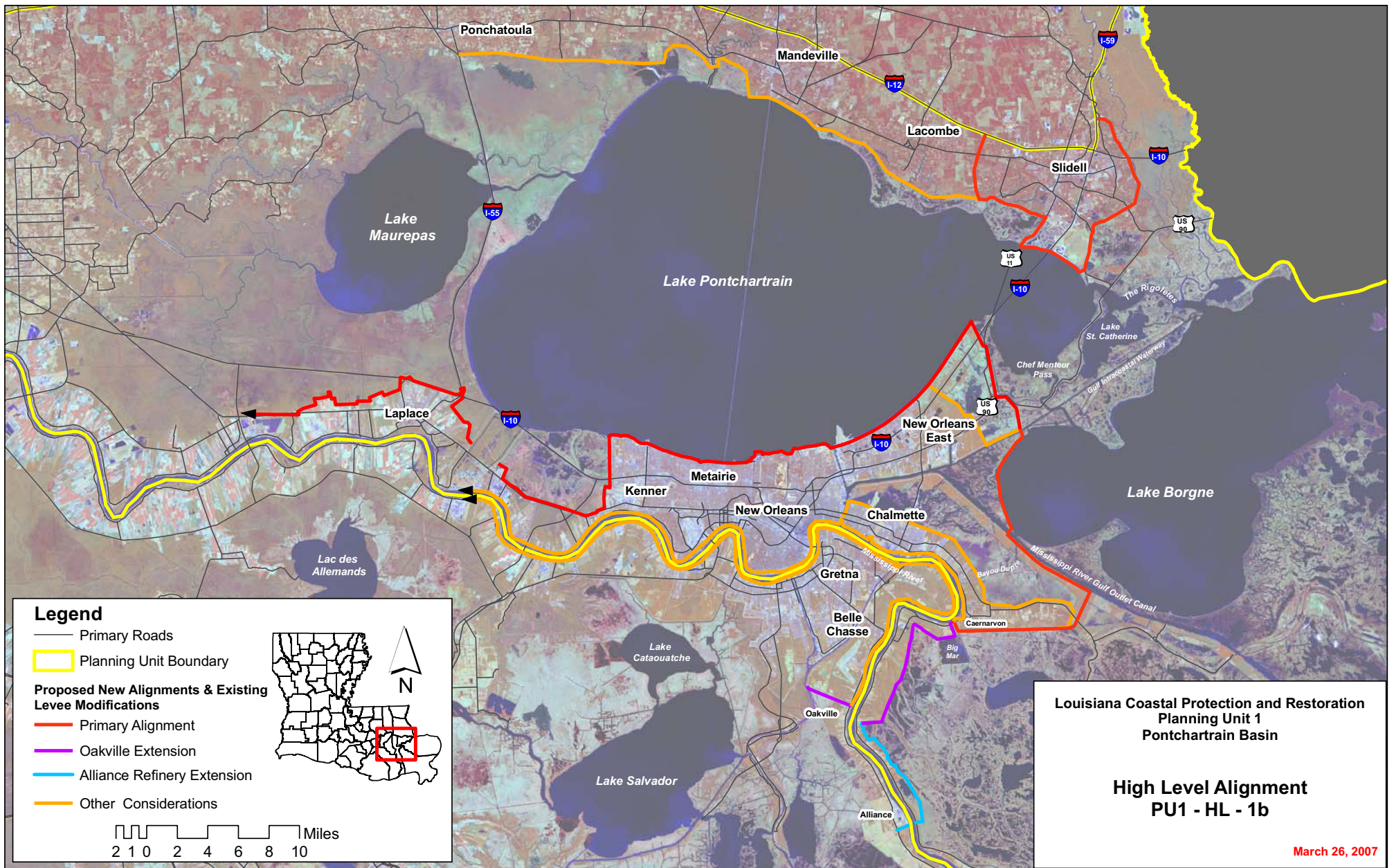
Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
High Level Alignment
PU1-HL-1b

General Description:	The High Level measure proposes to raise levees on the Southshore to CAT5 protection and adds levees on the Northshore. Variation: Levee crosses Golden Triangle along edge of Lake Borgne.						
Population Receiving Risk Reduction Benefits:	The New Orleans Metropolitan Area, consisting of the Greater New Orleans region (Orleans, Jefferson, St. Bernard and Plaquemines Parishes) and three additional parishes which share the perimeter of Lake Pontchartrain (St. Tammany, St. John the Baptist and St. Charles), is the largest metropolitan area in Louisiana, centered around the city of New Orleans. The pre-Katrina population of the New Orleans Metropolitan Area was over 1.2 million and is expected to grow to over 1.4 million by 2050.						
National and Strategic Resources:	French Quarter, Amstar Sugar, Mobil Oil, Murphy Oil, Air Products, NASA Michoud, National Finance Center, Orleans Parish Port Facilities, St. Bernard Parish Port Facilities, New Orleans International Airport, Elmwood Industrial Park, St. Charles Grain, Shell Chemical, Shell Oil, Motiva Chemical, Orion Oil, GATX Terminal, Transamerica Refining, Bunge Corporation, Inter. Matex.						

Line Color on Map	Legend Description	General Location of Reach	Alignment Description	New or Existing Alignment	Structures Required	Beneficial Considerations	Challenges
Red Green	Primary Alignment	Ring levee around Slidell	Slidell ring levee	New	Drainage for branches of Pearl River (Five 5-ft x 5-ft sluice gates at Salt Bayou and Gum Bayou; a 56-ft sector gate at Bayou Doubloon)	<ul style="list-style-type: none"> Interface between develop and wetlands Existing DM & EIS (although dated) Good sub soil 	<ul style="list-style-type: none"> Impact to drainage
		Lake Borgne to Bayou Dupre Control Structure	Lake Borgne alignment	New	150-ft sector gate on GIWW; 250-ft sector gate on MRGO	<ul style="list-style-type: none"> Reduces funnel effect Use marsh for storage Build in water to avoid direct wetland impacts 	<ul style="list-style-type: none"> Encloses wetlands
		Bayou Dupre Control Structure to Caernarvon	Follows existing Federal levee	Existing		<ul style="list-style-type: none"> Existing levee 	
		Southshore of Lake Pontchartrain from New Orleans East to Kenner	Follows existing Federal levee	Existing	110-ft sector gate at Seabrook	<ul style="list-style-type: none"> Prevents wave overtopping from Lake Pontchartrain 	<ul style="list-style-type: none"> Close to development
		Back side of Laplace	Follows Westshore—Lake Pontchartrain Feasibility Study Alignment	New		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Purple	Oakville Extension	Caernarvon to vicinity of Oakville	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas May eliminate the need for MS River levee improvements 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Aqua	Alliance Refinery Extension	Vicinity of Oakville to Alliance Refinery	Follows existing non-Federal levee	Existing		<ul style="list-style-type: none"> Provides incremental risk reduction for additional areas 	<ul style="list-style-type: none"> Incremental benefit may not justify the cost
Orange	Other Considerations	Along the Northshore of Lake Pontchartrain from Slidell to I-55 near Pontchatoula	Northshore alignment	New	Structures at bayous and canals	<ul style="list-style-type: none"> Prevents wave setup on Northshore Opportunity for non-structural measures 	<ul style="list-style-type: none"> Possible opposition from residents
		Along MS River upstream from Oakville to (TBD)	Upgrading MR&T levees	Existing		<ul style="list-style-type: none"> Prevents overtopping of MR&T levees 	<ul style="list-style-type: none"> Close to development
		Maxent Canal and Chalmette back levees	Follows existing non-Federal levees in New Orleans East and Chalmette	Existing		<ul style="list-style-type: none"> Would a provide redundant line of protection so that primary levees could be built lower 	<ul style="list-style-type: none"> Constructability Wetland impacts Narrow right-of-ways

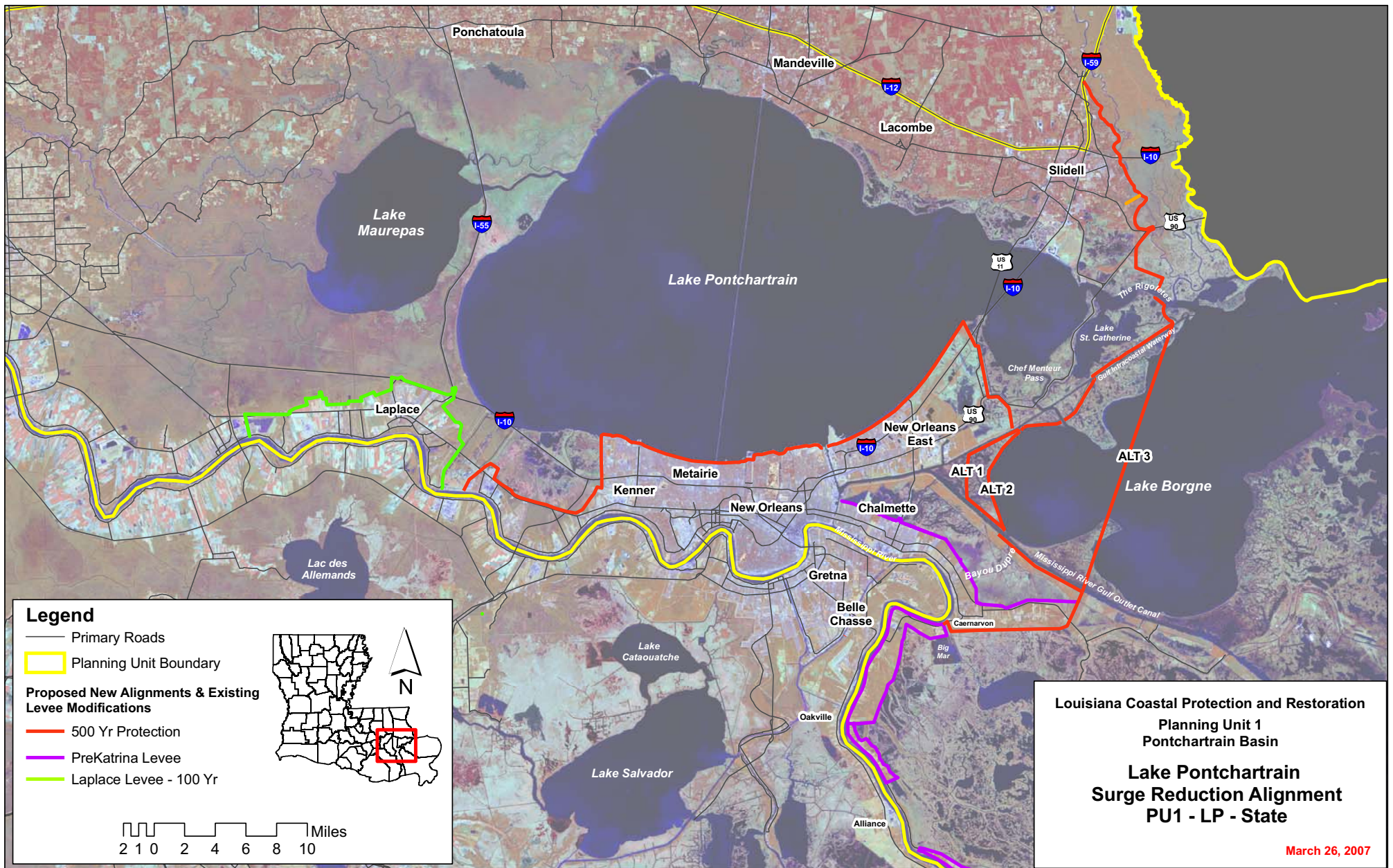
Reaches with variations from other surge reduction alignments.

Reaches which may need to be added to the primary alignment to decrease residual risk identified during detailed hydrologic modeling.



Louisiana Coastal Protection and Restoration - Planning Unit 1 – Pontchartrain Basin
Preliminary Draft State Master Plan Alignments
PU1-LP-State

See updated information on the State Master Plan at
<http://www.louisianacoastalplanning.org>



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